



E. 26

15 OCT 1931
MUSEUM MELB.

Handwritten: 1000

MUSEUM OF VICTORIA



09939

aff.

E.

(

SPENCER'S
LAST JOURNEY

NAT. MUS. MELB.

E





Emery Walker del. sc.

W. Baldwin Spencer.

SPENCER'S LAST JOURNEY

Being the JOURNAL OF AN EXPEDITION
TO TIERRA DEL FUEGO BY THE LATE
SIR BALDWIN SPENCER

WITH A MEMOIR

Edited by
R. R. MARETT and
T. K. PENNIMAN

With Contributions by
SIR JAMES FRAZER
and H. BALFOUR

OXFORD
AT THE CLARENDON PRESS

1931



W. Baldwin Hewitt

SPENCER'S LAST JOURNEY

Being the JOURNAL OF AN EXPEDITION
TO TIERRA DEL FUEGO BY THE LATE
SIR BALDWIN SPENCER

WITH A MEMOIR

Edited by
R. R. MARETT and
T. K. PENNIMAN

With Contributions by
SIR JAMES FRAZER
and H. BALFOUR

OXFORD
AT THE CLARENDON PRESS
1931

OXFORD UNIVERSITY PRESS
AMEN HOUSE, E.C. 4
LONDON EDINBURGH GLASGOW
LEIPZIG NEW YORK TORONTO
MELBOURNE CAPE TOWN BOMBAY
CALCUTTA MADRAS SHANGHAI
HUMPHREY MILFORD
PUBLISHER TO THE
UNIVERSITY

NAT. MUS. MELB.

PRINTED IN GREAT BRITAIN

P R E F A C E

HAVING been invited by Mrs. Young to edit her father's journals of his last journey, and that with the least possible delay, we have done our best to comply with her wishes, and beg to plead haste and the pressure of other work for any shortcomings that appear. One of us has compiled the brief memoir, being quite unable for reasons of space to do justice to the wealth of material, mostly in the form of letters, that could be utilized for the purpose. As the scientific aspect of this correspondence is at least as interesting as the biographical—for Spencer in his modesty is almost unduly reticent about his private feelings and concerns—it is to be hoped that some substantial part of it will be eventually published. The other of us has seen to the transcription and editing of the Journals, and is chiefly responsible for having seen the book through the Press.

Our joint thanks are due in the first place to Mrs. Young, who throughout has been most active in collecting information, and in general helping to make the book a worthy memorial of her father. Further, we have also to thank Mr. W. Howard Goulty, Mr. Henry Balfour, Sir James Frazer, and Sir H. J. Mackinder for information and for permission to use letters which Spencer wrote to them, Dr. George Macmillan for the use of a letter, and the owners of letters to the late Prof. J. G. Adami, the late Dr. A. M. Howitt, and the late Rev. Lorimer Fison. For the use of typed or printed articles we have to thank Dr. J. A. Gilruth, Mr. J. A. Kershaw, Bishop Hart, Mr. W. Mann, Mrs. T. a'Beckett, Dr. Georgina Sweet, and Mr. Sydney Ure-Smith. For other assistance we thank Lady Spencer, Mrs. Rowan (Spencer's daughter), Mrs. B. Goodfellow, Mr. G. H. Bowman, Mr. E. P. Ramsay, Mr. R. W. M. Waddy, Mrs. B. Malinowska, Mr. W. L. Sclater, Dr. G. C.

Bourne, Prof. E. B. Poulton, Dr. F. A. Dixey, Mr. J. A. R. Munro, Dr. J. G. Milne, Prof. A. Thomson, Mr. J. Ford, Prof. S. J. Hickson, Dr. A. Mumford, Dr. J. Cohen, Mr. H. B. Gray, Mr. Alfred Robinson, and many others, especially Miss Jean Hamilton, who made copies of the majority of the letters which were used in the Memoir.

As to the Journals themselves, the main part of the narrative is from a large quarto exercise book into which Sir Baldwin Spencer copied his field notes up to June 28, 1929. This is referred to as A in the footnotes. Beside this, there is supplementary material in a small field book of uncorrected rough notes, called B in the narrative, and this small book continues the diary up to July 3. The greater part of this small book, from June 28 to July 3, has been transcribed by Sir James Frazer, together with other notes of Anthropological interest from both journals. From July 3 until the time of his death and burial, the entries are from a small private diary in the possession of Spencer's daughter, Mrs. Young, and from the diary of Miss Jean Hamilton, who, with Señor Tekenica Williams, was with him when he died at Hoste Island, and brought his body to Magallanes for burial in the face of great difficulties, including the rebellion of a superstitious crew, and a series of the worst storms in the recent history of the Horn.

As many of the sketches were in ordinary ink or pencil on lined paper, and scattered about the text, it was necessary to re-draw them, or otherwise prepare them for publication. Mr. Henry Balfour kindly undertook the drawing of the Yaghan and Patagonian implements, comparing the mnemonic sketches with the original specimens, and the five plates of line-drawings with the accompanying description are his work. Dr. L. H. Dudley Buxton prepared a map and attended to the reproduction of the panoramic drawing, and Mr. B. W. Tucker, besides identifying some of the

birds from sketches and notes on their plumage, prepared Spencer's drawing of his dissection of the wing of *Tachyeres cinereus* (Gm.), a dissection which, apparently, has not hitherto been published. Mr. Tucker has also dissected the wing of a common wild duck for purposes of comparison, and has added a short commentary. Mr. William Chesterman made enlargements and prints of the Fuegian pictures suitable for reproduction from Spencer's negatives.

The Patagonian skull from Santa Cruz, and the adult Yaghan skull and young Yaghan skull and skeleton from kitchen middens on Navarin Island, are of such great importance that it has been judged best to make them the subject of a separate paper by Dr. L. H. Dudley Buxton, to be published in the near future.

Finally, our thanks are due to Mr. G. C. Robson and Mr. J. R. le B. Tomlin of the British Museum (Natural History) for identifying the shells in the collection, which are all mentioned in the footnote on p. 69, to Capt. J. Ramsbottom of the same institution for identifying the botanical specimens mentioned on pp. 64, 76, and to the Clarendon Press for the interest they have shown and for the trouble they have taken.

Again we have to thank Mrs. Young for the innumerable questions she has answered, and for the material she has collected, and Miss Hamilton for frequent help from her own diary and memory of events. It is to Miss Hamilton's courage and foresight that we owe the preservation and safe transport to this country of the journals and collection.

The footnotes are mainly by the editors.

R. R. M.
T. K. P.

OXFORD, *July* 1930.

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS	xi
I. <i>Introduction: BALDWIN SPENCER AS ANTHRO- POLOGIST. By SIR JAMES GEORGE FRAZER, O.M.</i>	I
II. MEMOIR. <i>By R. R. MARETT, D.SC.</i>	14
III. JOURNAL OF THE EXPEDITION TO TIERRA DEL FUEGO. <i>By the late SIR WALTER BALDWIN SPENCER, K.C.M.G., F.R.S.</i>	47
IV. AN ACCOUNT OF THE ARTEFACTS COL- LECTED IN PATAGONIA AND FUEGIA. <i>By HENRY BALFOUR, F.R.S.</i>	124
V. NOTE ON SPENCER'S DISSECTION OF THE WING OF THE STEAMER DUCK, <i>Tachyeres cinereus</i> (Gm.). <i>By B. W. TUCKER, M.A.</i>	143
VI. A CHRONOLOGICAL LIST OF SPENCER'S WORKS. <i>By T. K. PENNIMAN, M.A.</i>	145
INDEX.	151

41-55 MELB.

LIST OF ILLUSTRATIONS

Map of Tierra del Fuego and Islands to the south	<i>facing page 47</i>
Panoramic view from Navarin Island looking across Nassau Bay south-east to Cape Horn (drawn by Spencer on June 5, 1929)	79

PLATES

W. Baldwin Spencer (taken about 1905)	<i>Frontispiece</i>
I. Spencer as a boy (about thirteen years old)	<i>facing page 16</i>
II. Group taken in the University Museum at Oxford in 1884. (Reproduced by kindness of Dr. G. C. Bourne and Mr. H. Balfour.)	22
III. Mr. F. J. Gillen	26
IV. Spencer in 1927. (Taken by Mr. G. H. Bowman, Spencer's brother-in-law.)	44
*V. 1. Small glacier, Romanche Range: Beagle Channel, north-west arm. 2. Lapataia Bay, showing Darwin Range: Beagle Channel, near Ushuaia	56
*VI. 1. Beagle Channel, north-west arm. 2. Entrance to Rio Douglas, Isle Navarino, Chile	58
*VII. Yaghan Indians, Rio Douglas Camp, Isle Navarino	70
*VIII. 1. Isle Navarino. 2. Rio Douglas, Isle Navarino, looking across the water to Ponsonby Sound	82
IX. Spencer's diagrams of the musculature of the wing of the Loggerhead or Steamer Duck, <i>Tachyeres cinereus</i> (Gm.)	92
*X. 1. Entrance to Cove, Murray Narrows, Isle Hoste, Tierra del Fuego, showing two-ton cutter in which Spencer journeyed from Rio Douglas. 2. Another view of the Cove	108
*XI. 1. Yaghan Indians, Murray Narrows, Isle Hoste. 2. Framework of Toldo (wigwam) after departure of Indians, Murray Narrows, Isle Hoste	110
*XII. Camp at Murray Narrows, Isle Hoste, Tierra del Fuego, showing the hut in which Spencer died	118
XIII. The schooner 'Renalto' which brought Spencer's body from Isle Hoste to Magallanes	122

* Taken by Spencer.

FIGURES IN TEXT

FIG.		
1.	Fernando Noronha (facsimile from a letter to a friend)	48
2.	Arrowheads	53
3.	Boleras	53
4.	Lasso	53
5.	Bolera with thong attached	54
	(2-5 are facsimile reproductions from a letter to Balfour)	
6.	Severillo and other trees (facsimile half-page from large journal)	77
7.	Sketch showing Murray Narrows and Cove where Spencer made his final camp	107
8.	Patagonian and Fuegian implements	137
9.	Patagonian implements	138
10.	Yaghan implements of bone	139
11.	Modern and obsolete implements	140
12.	Yaghan side-scrapers	141

*The binding brass for this book is designed
from a photograph of the Schooner 'Renal-
to', which brought Spencer's body from
Hoste Island to Magallanes*

I

INTRODUCTION

BALDWIN SPENCER AS ANTHROPOLOGIST

By SIR JAMES FRAZER

THE early life of Spencer may be said to have been a fortunate, though necessarily undesigned, preparation for the great work which he accomplished in the maturity of his powers. His training in biology and zoology familiarized him with the conception of physical evolution in the animal and human species, and at Oxford the teaching of Tylor, the true founder of anthropology in England, initiated him in the elements of mental and social evolution in the history of man. Thus, when the happy circumstance of a call to Melbourne led Spencer to settle in Australia, he was well prepared to grasp the significance of the primitive, or rather archaic, forms of plant, animal, and human life, which the immemorial seclusion of that continent from the rest of the world has preserved as in a museum to satisfy the curiosity of later ages concerning the development of life on our planet. In his new home Spencer's attention was naturally drawn at first to those early forms of animal life which it was his special duty, as Professor of Zoology at Melbourne University, to investigate. But, later on, his fortunate attachment to the Horn Expedition led him to make the acquaintance of the Arunta, the great aboriginal tribe in the very heart of Australia, who, dwelling in the most isolated region of the most isolated continent, have survived to our time as if on purpose to hold up to us a mirror of the life of man as it was in ages long before the dawn of history. To have discovered the picture, or rather the long series of pictures, in the mirror and revealed it to science is the outstanding

achievement of Spencer and must ensure for him, for all time to come, a foremost place among the pioneers of anthropology. He had, indeed, an able and enthusiastic colleague in the person of his friend F. J. Gillen, who, as Protector of the Aborigines, had lived among the Arunta and had amassed a considerable body of information concerning them before Spencer visited the tribe for the first time in 1894; but it is probably doing no injustice to the memory of the genial Irishman to suppose that, like many men in similar contact with primitive peoples, he would have passed away without leaving any record of his priceless knowledge if it had not been for the inspiration and direction of Spencer. Henceforth the two men devoted all the leisure which their professional duties allowed them to deepening and widening their acquaintance with the aboriginal tribes spread over an immense area of Australia, from the dreary wilderness of Lake Eyre in the south to the shores of the Gulf of Carpentaria on the north. After Gillen's death Spencer still further extended the range of his researches by studying the tribes of North-West Australia in the neighbourhood of Port Darwin, including the interesting and little-known tribes of Bathurst and Melville Islands. But the tribe which he and Gillen knew best was the Arunta; it remained the central point of their studies and supplied in a sense the standard by which they judged the rest. The last work but one which Spencer published was a monograph on the Arunta, which embodied all the information given by him and Gillen jointly on this particular tribe in *The Native Tribes of Central Australia*, but enlarged by the addition of fresh and valuable materials which Spencer alone had collected from the surviving old men of the tribe in the course of investigations which he undertook in the latter years of his life for the purpose of correcting or corroborating his former accounts on doubtful matters. The result of these, his latest

Australian researches, was to confirm his original information on all essential points.

The general outcome of Spencer's work on the aborigines of Australia, of whom in his long and laborious researches he had acquired a more extensive and exact knowledge than any man before him had acquired or than any man after him can hope to acquire of this dying race, was to place on record a full, detailed, and exact description of a people living in the Stone Age, without metals, without clothes, without houses, without domestic animals (except dogs), and not only without agriculture but without even the conception that seeds will grow and multiply if you plant them in the ground. For subsistence these folk depended entirely on the flesh of the animals which the men killed, and on the vegetable food which the women gathered from the trees and plants, supplemented by the seeds and roots which they grubbed up with their digging-sticks, but which it never occurred to them to plant again in the ground for the sake of ensuring, in a subsequent crop, a manifold return for the temporary sacrifice of the food which they had committed to the earth. As for sheep and cattle, they were necessarily destitute of them for the sufficient reason that no such creatures existed in Australia until they were imported from Europe. Thus the material condition of these savages was the simplest and lowest consistent with the existence of human life on earth.

But if their material life was of the simplest possible kind, it was by no means so with their social and even intellectual life. For they had created a social system which, in regard to the relation of the sexes, was far more complicated and strict than any recorded in the history of civilized nations in any part of the world. And though their capacity to count did not exceed the first few digits, they had evolved an elaborate system of mythology based on the belief in the

survival of human souls after death and their subsequent rebirth in an endless succession of human generations. Their fertile imagination peopled the wilderness—the rugged rocks, the desolate hills, the solitary trees, the lonely tarns—with the spirits of the dead awaiting reincarnation and watching for women passing by in order to dart into them and be born again into the world. For, ignorant of the part played by the male in the reproduction of the species, they firmly believed that conception was thus effected by the entrance of a spirit into the mother's womb, and that the place where she first felt the new burden was the spot where, at the same moment, the soul of the infant had entered into her. Strange as it may seem to us, this ignorance of physiological paternity must at one time have been universally prevalent among mankind, and though most savages are now aware of the part played by the father in the begetting of children, the childish ignorance on the subject still survives as an isolated phenomenon in some parts of the world, as in the Trobriand Islands, the natives of which nevertheless stand at a much higher level of culture than the Australian aborigines, since they subsist mainly by agriculture, or rather horticulture, live in settled dwellings, and engage in seafaring and commerce. But Spencer and Gillen were the first to record this more than Arcadian simplicity in regard to the birth of children among existing savages, and it is not the least remarkable of their discoveries for the light it throws on the mental condition of primeval man. The observations made by them in this respect among the natives of Central Australia were soon afterwards independently confirmed, or rather extended, for the aborigines of Queensland by the Rev. Dr. Frodsham, Bishop of that diocese. The scepticism with which the evidence of first-rate observers on this point has been received by some critics is only one proof more of the utter incapacity of many civilized

men to place themselves at the point of view of uncivilized humanity.

The same curious belief as to the birth of children furnishes the clue to the otherwise apparently inexplicable totemic system of the Central Australian aborigines; for, like savages in many parts of the world, they had a system of totemism, which indeed formed, we may almost say, the very core of their social and intellectual life. But unlike totems elsewhere, which are usually inherited by children from their father or their mother, the totems of the Central Australian aborigines are not derived from their parents at all but are determined by the spot where the mother first felt her womb quickened, because there, they believe, the spirit of the infant entered into her from the nearest natural object, whether stone or tree or what not, in which the congregated spirits of one particular totem (for example, a kangaroo or an opossum) had been waiting to pounce out on women and be born of them again into the world. Such natural objects, each haunted by spirits of a particular totem, are known as local totem centres; and if a woman first feels the child stirring in her womb near one of them which is haunted, for instance, by spirits that had the kangaroo for their totem, then her child, when it is born, will also have the kangaroo for its totem; and so on with all the rest.

And their unquestioning faith in the survival of the spirits of the dead has affected the life of the tribes in another way; it has endowed them with a drama. For a considerable part of their abundant leisure is devoted to representing dramatically the legendary doings of their ancestors, who are believed to have roamed about the country creating all the more conspicuous landmarks, whether rocks or trees or pools, which vary the otherwise monotonous and dreary expanse of the Central Australian wilderness; and although, so far as I remember, the authors do not affirm it, we may

perhaps conjecture that the spirits of the dead ancestors, lurking unseen in the rocks or trees, are believed to be gratified by the sight of these commemorative services. Thus far, therefore, the example of these primitive Australian dramas may be thought to confirm by analogy the theory of the late Sir William Ridgeway, that Greek tragedy originated in the commemoration and propitiation of the dead.

But the dramas of the Central Australian aborigines are by no means all simply commemorative. A very important class of them is purely magical, being designed to maintain and multiply by magic the natural sources of subsistence, whether vegetable or animal, whether solid or liquid, on which the very existence of the community is dependent. It would, therefore, be difficult to exaggerate the importance which the natives attach to the proper performance of these magical rites; it is for them a matter of life and death. The essence of the rites consists in mimicking the object which the performers desire to produce; for the principle of magic on which they proceed is that of sympathy or imitation; the ceremony must resemble the effect which it is meant to bring about. If the intention, for example, is to produce a supply of edible insects, the performers imitate the shape and movements of the creature; if they desire to secure a supply of water, they imitate the fall of rain; and so on with the other departments of nature which are to be magically kept in working order.

Now this system of satisfying all the material wants of life by means of magic is ingeniously dovetailed by these savages into their totemic system, or rather perhaps forms an integral part of it. For, roughly speaking, they have subdivided the whole of nature into totems, and have distributed the various departments of nature, as totems, among the totemic clans, charging each clan with the duty of maintaining its own particular department, that is, its totem (it may be a species

of plants or animals, or water, or the sun, or what not), for the public good by means of imitative magic. Thus the whole tribe forms, as it were, a single great co-operative society, working together, by a system of co-ordinated activities, for the maintenance of nature in the interest of man; the aim and intention are thoroughly practical, and to all appearance the results are entirely satisfactory. For undoubtedly nature continues to pursue its regular course in Central Australia: edible plants still grow and edible animals still multiply; the sun still shines, and rain still falls, if only you wait long enough for it. What better proof could the Australian native desire of the efficacy of his magic?

This revelation of totemism as, in one of its aspects, an industrial system of co-operative magic for the supply of human wants is one of the great discoveries of Spencer and Gillen. No such system, at once social, industrial, and magical, so complete in its organization and so far-reaching in its aims, has yet been recorded in any other part of the world, though what may be isolated fragments of such a system have here and there been noted in the shape of magical rites for the maintenance or multiplication of totems.

One particular feature of the Australian magical rites for the multiplication of totems is deserving of special notice. In general these Central Australians observe the common rule of totemism which forbids a man to kill and eat his totemic animal, or to gather and eat his totemic plant. But to this rule the savages in question make a very remarkable exception; before a man performs a magical ceremony for the multiplication of his totem, he is obliged to kill and eat a small portion of it, if it is an animal, or to gather and eat a little of it, if it is a plant. Should he not thus partake of his totemic animal or plant, it is believed that his magic would be ineffectual to produce a supply of it for the benefit of those members of the tribe who do not belong to his totemic

clan and are therefore free to partake of his totemic animal or plant. Apparently, though we are not told so expressly, the notion is that by eating of the totemic animal or plant a man identifies himself with his totem and so acquires the power of multiplying it. Thus the eating of the totem is in a sense a totemic sacrament, such as the genius of William Robertson Smith divined the existence of long before any clear case of it had been discovered in practice.

Such are in brief outline a few of the outstanding discoveries which have rendered Baldwin Spencer's work epoch-making in the history of science, because they reveal the mental condition and social activities of man at a lower stage of evolution than any other in which his life has been described for us by competent observers. It is very improbable that any similar revelation of primitive humanity awaits us in the future; for the circle of living savagery—that preserve of ancient man—is rapidly shrinking through the perpetual encroachments of civilization, which threatens before long to swallow it up altogether. Hence the record of Central Australian savagery, which we owe primarily to the genius of Baldwin Spencer, is likely to remain for all time the standard by reference to which, more than to any other documents, future inquirers will attempt to estimate the comparative antiquity of forms of society and to trace them to their origin in times which lie far beyond the reach of history. Thus the work of Spencer promises to provide a firm and solid basis for all future researches into the early phases of the mental and social evolution of our species.

If we ask what were the qualities which enabled Spencer to accomplish his great work, the answer would seem to be that they were a lively curiosity and insatiable thirst for knowledge, first-rate powers of observation, inexhaustible patience, and an entire freedom from the bias of preconceived ideas, all combined with and reposing on an iron will, great

capacity of physical endurance, and a genial and cheerful disposition, which won him the confidence and esteem of the shy savages, who treated him as one of themselves, recognized him as a full member of the tribe, and revealed to him secrets which they would probably have concealed from a less sympathetic inquirer. Hence in all his wanderings, though they brought him into contact with natives of whom some had never seen a European before, while others had been engaged in bloody affrays with white men, his relations with the aborigines were invariably peaceful and friendly; he never had to resort to his weapons in self-defence.

The openness of a mind unwarped by preconceived notions and foregone conclusions, which is one of Spencer's foremost characteristics, is conspicuous in all his writings and contributes largely to their scientific value. For the most part he was content to record in clear and simple language the facts which he had personally observed or ascertained directly from his native informants; he did not attempt to theorize upon them or to institute comparisons between them and those of other peoples in other parts of the world. All such theories and comparisons he regularly and rightly left to the comparative ethnologist, whose function is at once different from and complementary to that of the descriptive ethnologist.

Perhaps the only subject on which Spencer, departing for once from his habitual reserve, indulged in speculation on origins, was that of the Classificatory System of Relationship. This curious system, which may perhaps be described as the hall-mark of savagery, since it appears to be universally prevalent among savage tribes and universally absent among civilized peoples, arranges all the members of a community in classes or groups on the basis of their social rather than consanguineous relations to each other. Spencer found it in full vogue among the Arunta and the other Australian tribes

with which he came into contact, and after describing it in *The Native Tribes of Central Australia* (published jointly with F. J. Gillen) he adduced some reasons for thinking that this system of group relationship was derived from a system of group marriage, of which he believed traces to survive in certain existing customs regulating the relations of the sexes among the Australian aborigines. But when he treated of the same subject in his later work, *The Arunta*, which is in substance a revised and enlarged edition of the account which he had given of that tribe in *The Native Tribes of Central Australia*, he entirely omitted this suggestion as to the origin of the Classificatory System of Relationship, and confined himself to describing the facts of the system in a fuller form, leaving his readers to draw their own inferences. Apparently he had come to the conclusion that the discussion of origins should form no part of the description of a particular tribe. But I have no reason to think that he ever abandoned the theory, for he vigorously maintained it in a personal discussion with Professor Edward Westermarck which took place at my rooms in the Temple long after the publication of *The Native Tribes of Central Australia*, but before the publication of *The Arunta*. Elsewhere in his writings, so far as I remember, he has uniformly abstained from the discussion of origins, and in so doing he has given proof of his scientific caution. The whole bent of his mind was indeed to observation rather than to speculation; he collected an immense mass of new and important facts, but in general he left the interpretation of them to others. He laid the foundations of the science of man in a series of exact observations; it will be for future inquirers to complete the structure by rearing on his foundations a solid edifice compacted of sound inductions. That may prove a task which will demand the labours of generations yet to come.

Among the high qualities which Spencer brought to the

execution of his life work we ought not to overlook his artistic temperament and skill. He derived the keenest enjoyment from the contemplation of beautiful pictures, and would spend whole days in the great European galleries feasting his eyes on their masterpieces. Indeed, these galleries were among the magnets which drew him most strongly from Australia to Europe. During the Great War he even risked his life by crossing the submarine-infested seas to visit London for the purpose of procuring pictures for the Art Gallery at Melbourne, in which he took a deep interest. He was himself no mean draughtsman, and used to illustrate his journals and family letters profusely with sketches which testify alike to the keenness of his observation and to the deftness of his hand. Many of these sketches are reproduced in the last work which he published, *Wanderings in Wild Australia*, and they help the reader greatly to picture to his mind's eye the scenes described by the explorer.

But still more graphic than his sketches are the verbal descriptions which Spencer gives of the varied and often wonderful regions which he traversed in his immense journeys; for he wielded the pen no less adroitly than the pencil, and the landscapes which he depicts for us, while they never seek literary effect by elaborate word-painting, always bear the impress of perfect fidelity to nature. A conspicuous instance of his descriptive power is his account of the marvellous change which comes over the Australian desert when a drought of many months is broken by heavy rain, and what had seemed a region of absolute sterility and death is suddenly transformed, as if by magic, into a vast garden gay with a profusion of flowering plants and teeming with an endless variety of animal life. The same power of bringing a landscape vividly before the reader's mind comes out in his incidental descriptions alike of the dreary stony plains, desolate mountains, and rocky gorges of the far

interior, and of the lily pools and tangled thickets of the northerly regions, where a more abundant supply of moisture and the neighbourhood of the sea lend to the country a softer and more luxuriant aspect, which contrasts sharply with the stern and forbidding character of the central desert. And everywhere, with an artist's eye, he notes the colours of flowers and trees, of birds and beasts, of sky and cloud, which relieve and brighten what is too often the dull and featureless monotony of the bleak Australian scenery.

It is true that the author's powers of landscape painting find little scope in his purely anthropological works, where his attention is concentrated on the natives themselves rather than on their natural surroundings, but they impart vividness to the narrative of his travels in his latest book, *Wanderings in Wild Australia*. In the directness and simplicity of its style, in the impression which it leaves of truth to nature, in the fascination of its descriptions of strange folk and ever shifting scenery, *Wanderings in Wild Australia* may be compared to the *Odyssey*. If the writer did not tread enchanted ground, at least he moved among people who firmly believed in the power of enchantment and constantly resorted to it for the satisfaction of their wants and the confusion of their foes; if he did not encounter monsters like the Cyclopes or Scylla and Charybdis, at least he beheld with his own eyes the rocky pool in which the dreadful dragon, the Wollunqua, was believed to lurk, ready to dart out and devour its human victims. All this serves to invest the story of Spencer's wanderings in Australia with an atmosphere of romance, and to lend it the character of an anthropological epic.

The same restless and untiring pursuit of knowledge which led this knight errant of science to undertake these wanderings led him at the end of his life to extend his researches to another continent and another people, the aborigines of Tierra del Fuego. It was a gallant attempt,

but the weaker body refused to bear the last burden laid on it by the indomitable spirit. His wanderings are now over, and he rests from his labours, far from his native England and his friends, in a lonely grave under the southern stars. But his writings will long survive him for the enlightenment of a distant posterity and for a monument, more lasting than any of bronze or marble, to his fame.

II

MEMOIR

By R. R. MARETT

Rector of Exeter College, Oxford

THE greatest lives are of strong but simple framework, and the life of Baldwin Spencer furnishes an illustration in point. No doubt his gifts were many and various, inasmuch as he was artist, biologist, and anthropologist in one. Yet the delicate sense of form fostered an appreciation of the niceties of animal structure; while the morphological interest in its turn stimulated research into the complex organization of primitive society. Thus the entire nature of the man found harmonious expression in his work; which in like degree bears the stamp of individuality and unity of purpose. Hence for an adequate biography of him there is scarcely need to look beyond the well-known volumes containing the account of his discoveries, and that though whatever he writes is singularly devoid of any mention of self. How easy it is, indeed, to ignore the romance that lurks behind the dispassionate prose of science! For, although truth of fact is but one kind of truth, its votaries can have their fill of spiritual adventure, so vast and wonderful is the sphere of their manifold activities. This holds good even when much seeking leads to little result. It holds good likewise when the price to be paid for successful study is imprisonment within the four walls of a room. But Baldwin Spencer not only sought but found abundantly. Again, his inquiries were such as to lead him far afield, so that his body, no less than his spirit, was free to voyage amid wide spaces. His natural knight-errantry, then, was granted by circumstance its full scope, seeing not only how he lived, but even how he died. Despite the grim background, his end cannot be viewed as a tragedy. He worked on in complete

vigour until suddenly he was spent. This is sufficiently proved by the Journal with its calm entries that never show sign of despondency or of failing powers right up to the last. The investigation which Charles Darwin as a young man had to leave incomplete, Baldwin Spencer, though an old man, meant to carry through if he could. Fate proved too strong after all; but it was a grand and gallant finish. Thus he rounded off the task and ambition of his life—to explore to the world's end.

Walter Baldwin Spencer was born at Stretford in Lancashire on June 23, 1860. He was the second son in a family of thirteen, consisting of six sons and seven daughters. His father, Reuben Spencer, himself one of a family of twelve, had left his native Derbyshire for Manchester as a lad, and by his own unaided efforts had advanced in the service of the firm that he originally joined until he became Chairman of its Board of Directors. His mother's surname was Circuit, as I learn from the last letter that he sent me, not long before his death, from the Magellan Straits:

'Out here in Chile no stranger is allowed within their gates, at least not for a longer period than eight days, without securing from the police a 'carnet'—or kind of little booklet containing a photo, identification number, and finger (thumb) print. When catechizing me I noticed that they paid special attention to my mother, and on my 'carnet' my name, or at least that under which I am known to the police, is given as Señor Walter Spencer-Circuit, the last name being my mother's maiden name. It made me think that I was back amongst the maternal-descent tribes of Central Australia.'

With his brothers, young Spencer attended Old Trafford School, a private institution of not more than a hundred boys, that lay conveniently within half a mile of the paternal door. Small as it was, this establishment must have been conducted on sound lines, since two of Spencer's fellow-pupils were destined to share with him the title of F.R.S., while several

were no less successful in other spheres. As for Spencer himself, he seems to have given a good account of himself both at work and during play-time; for not only did he pass both the Oxford and Cambridge Senior Local Examinations, but he likewise won several events in the athletic sports, being particularly good at running. Evidently, then, he had inherited his father's character and brains, and was likewise endowed with a well-knit frame and a healthy constitution.

On leaving school his first idea was to adopt the profession of a painter, and with that end in view he entered the Manchester School of Art, then under Mr. Muckley. It soon turned out, however, that the morphological studies of men and animals prescribed in order to improve his drawing interested the scientific side of his mind even more than the aesthetic; and he had thoughts of taking up medicine. Not that he ever regretted the year spent in the pursuit of Art. Alike in the field and in the lecture-room his ability to record and expound his observations in accurate and striking visual forms was of the greatest assistance to his scientific work. Moreover, he thus developed a taste for graphic expression that furnished him in his private life with one of his chief delights, whether he was visiting galleries and collecting pictures, or whether he was writing long letters to his family with charming sketches dashed in as quickly as his pen could run.

Leaving the School of Art he entered Owens College, and there, under the influence of Professor Milnes Marshall, was presently convinced that Science should be sought for its own sake—in other words, that biology must be his life-study. Milnes Marshall, a fiery spirit and full of enthusiasm for his subject, had just been appointed to his Chair, and, though himself no mean hand with diagrams, at once proceeded to make much use of Spencer's artistic skill. It was the custom for seniors and juniors to meet in the Zoological

PLATE I



SPENCER AS A BOY (about thirteen years old)

WATKINS, J. H.

Laboratory and hold discussions on current topics such as the Darwinian question, and it was here that many of Spencer's contemporaries, Sir W. Thorburn, Professor E. S. Reynolds, and other distinguished students of neurology and kindred subjects, were led to find their vocation. When Spencer gained a scholarship at Oxford it was regarded by all as a feather in the cap of Milnes Marshall, since it showed that he had raised biology to the same level as had been attained by chemistry under Roscoe, by physics under Balfour Steward, or by mathematics under Barker. After being elected Scholar at Exeter College in October 1880, he remained with Milnes Marshall until he went up to Oxford a year later, engaging during this interval in original research and winning the Dalton Prize in Natural History. Much of this information comes from his friend Professor J. G. Adami, late Principal of Liverpool University, who was at Owens College with him and studied biology in his company.

For Spencer's Oxford days I am able, thanks to the kindness of Mr. Howard Goulty, with whom he maintained a continuous correspondence, to draw freely on a series of vivid letters, every word of which is of interest, at any rate to an Oxford and Exeter man. In his very first letter from Oxford he writes, 'this is such a grand place'; though he goes on to hint that pain as well as pleasure attended his visit in the capacity of a scholarship-hunter:

'I never before felt so unfortunate, or so quite at sea in an exam. To begin with, the physics papers were horribly mathematical, and you know what that means. And then instead of biology we are having physiology, in which, to put it in a mild kind of way, my knowledge is not vast. . . . However, I had it out with the Examiner afterwards. . . . I told him that I had come prepared to dissect creatures; and he asked me if I should like him to give me some dissection—a proposal to which I readily assented.'

The Examiner in question was probably W. L. Morgan,

then Lecturer in Biology to the College, which at the same time counted among its Fellows Henry Nottridge Moseley, F.R.S., and Edwin Ray Lankester, F.R.S., both of them biologists of greater fame. The former, sometimes referred to irreverently in the letters as 'the Moa', had been Naturalist to the Challenger Expedition from 1872 to 1876, and becoming Linacre Professor of Anatomy in 1881 was to play a leading part in shaping Spencer's undergraduate career.

Coming up with the other freshmen in the Michaelmas Term of 1881, young Spencer finds himself in pleasant rooms overlooking 'the Broad', and is delighted with his companions, making friends at once with a dozen, 'and that is plenty, for you have no idea of what a time they take up'. He has his first taste of boating—'such splendid exercise and such an entire change also'. He learns to mind his manners when 'Mrs. Rector' gives a 'perpendicular', meaning 'an evening-dress entertainment most awfully stiff, in which the gentlemen, standing up, screw their necks about and talk to the ladies, sitting down, for the space of two or three hours—such agony!' Within the year, too, he assists at certain celebrations of a riotous character consequent on the College Eight going Head of the River. 'About nine we started a bonfire in the middle of the Quad, clearing out all the faggots we could lay our hands upon and also getting rid of some old furniture out of the lecture rooms. This was an eminent success . . . though I am thankful it does not come often.'

For Spencer had come to Oxford to work. 'Six hours *per diem*', he confides to the friend of his youth, 'is *very* good at Exeter; seven hours denotes a "smug"; anything beyond that is considered the mark of a madman.' It would appear, however, that Spencer's own allowance of time for reading verged on that of the madman. He had to tackle preliminary examinations in classics and divinity, and is very glad when they are over, and he starts on biology for his Finals, and

can report: 'I have begun real hard work, very different to that of last year; it is striking what a change it makes in the pleasure of reading when the subject is a pleasant one.' He dips into philosophy; finds time for some English literature, poetry as well as prose; has half a mind to take up history seriously; and after listening to a sermon by Jowett launches into theology and commends him for the clearness with which he announces his belief in the evolution of religion. What is perhaps more to the point in view of his future mental development, he attends anthropological lectures by Tylor in company with his great friend H. J. Mackinder of Christ Church—so great a friend indeed that, when the latter is elected President of the Union, 'I had a severe run to have the pleasure of letting him know first'. The two of them discuss long and earnestly the choice of a career. 'He will go in for a more or less public life. . . . I have given up all idea of doing anything in public, and am going to be content with the more or less quiet life of a scientific man.' He adds, in his sober-minded way, 'I always come back to think that after all the best thing is to have a really happy home.' It may be that his scientific life proved none too quiet inasmuch as it involved endless campaigning among wild peoples in wild places; but there can be no doubt that it was his good fortune to possess and enjoy the happy home for which he longed.

Meanwhile Spencer is sticking hard to his main job, though the effort is sometimes painful. 'It is almost a sin to spend any of such glorious weather indoors, and terribly tantalizing to watch other men going off to boat or tennis whilst you yourself must work. Virtue is not always its own reward; or perhaps it is no great virtue after all to read for an exam. which you want to pass.' The thought of what is before him is slightly daunting. 'One of the horrors of an Oxford exam. is that you know there is a *viva*, in which you

can most delightfully be made a fool of—in public, moreover!’ Or, again, when he writes to say that the date for his Schools is actually fixed, he proceeds: ‘I must confess to feeling very far from safe, and a Second, though disappointing, is quite on the cards.’ With what relief, then, does he announce on June 13, 1884, ‘List just out, and I am glad to say I have got a First. Moseley and Gamgee simply congratulated me on “the excellence of my work” instead of plying questions. I am only the third man who has ever got a First at the end of his third year in Biology!’

With a First Class to his credit, and with powerful backing from within his own College, Spencer was now fairly launched. Moseley immediately promised him some work, to begin next term as soon as he had refreshed his tired brains with a good long walk with Mackinder on the Continent. From the Rhine, the Black Forest, and Switzerland he sends back letters full of impressions. He has acquired a new idea of colour which he hastily endeavours to reproduce in his sketches—‘but it was no good’. Back again in Oxford, he settles down with Mackinder in lodgings in Frewin Court. He has little cash in hand, but soon he ekes it out by coaching; ‘I have already two “pups”’—two more than I expected.’ He longs for a Fellowship. ‘It must be extremely comfortable to have £200 for seven years. One could work more in peace than is possible now with the anxiety constantly present of how to get money enough.’ Meanwhile Moseley is losing an Assistant at Easter, and offers Spencer the post. A little later we read: ‘I am beginning some special original or quasi-original work which Ray Lankester suggested to me, and the great man promised to publish it for me.’ At the same time he is helping Professors Moseley and Tylor to remove the anthropological collections of General Lane-Fox Pitt-Rivers from South Kensington to Oxford—a herculean task involving the labelling of some

fifteen thousand objects. Thus already his biology and his anthropology progress in happy conjunction; for 'Tylor is the best anthropologist in England'. Somewhat inconsistently he proceeds to qualify this estimate.

'I have been much surprised to find that, though Comparative Anatomy is Moseley's subject, yet he really knows considerably more concerning Anthropology than even Tylor. In fact, Moseley is a very remarkable man, and, when brought at all closely into contact with him, you soon feel that he is no ordinary man. Of course he has been almost everywhere, and this alone gives a man considerable power if only he keeps his eyes open. He was a favourite of Darwin, though of course much the latter's junior, and, like everybody else who ever came near him, has the greatest reverence for his "master".'

Yet this admiration for his teacher, so characteristic of Oxford which tries to base education on friendship after the Greek tradition, is not uncritical. For he goes on: 'Moseley, however, is, I think, too narrow in some ways. He thinks science to be *the* training for everything—business or profession, and even for politics. One evening we had a long talk on this subject, and we agreed to differ.'

After a year's steady work, refreshed by a short trip to the Continent, Spencer obtained by open competition a Fellowship at Lincoln College. On the last day of January 1886 he writes: 'Just a line to say that I believe I have got the Lincoln Fellowship. The actual election by an old custom takes place in Chapel to-morrow. It is a relief, and I am deeply grateful for the start which it gives me. All through the last few years I have met with wonderful good fortune—first Owens, then Exeter, then this place with Moseley, and lastly this affair now.' Lincoln is now under the genial W. W. Merry, and he and others give young Spencer the chance of seeing something of Oxford society. 'I feel dreadfully young and junior among these people, but find them all extremely kind, and as yet have not come across any Mark

Pattison to damp one's energies. Fortunately as a science man one is allowed—even expected—to be energetic to a certain extent.' And energetic he is to an extent that at once brings him into prominence. 'I am hard at work day and night on the lizard's eye, and hope to make a good thing of it. I shall have a paper ready for the Royal Society before long now.' This paper on the presence and structure of the pineal eye in lizards he duly reads before the Royal Society on June 10, incidentally peeping in at the Academy, where he finds 'only one or two pictures which you really care to spend much time with.' In October he writes:

'By good luck together with Moseley's kindness I have been able to get out an article which is attracting some little attention among biologists. It concerns the presence of an extra eye in Lizards on the top of their heads, and is of interest from an Evolution point of view, explaining the presence of a most mysterious part of the brain in all the higher animals, even ourselves. . . . In a short time I am to give an evening lecture at the Royal Institution in town on the subject.'

Things are moving rapidly with him, however, for next month he is getting together testimonials for the Professorship of Biology at Melbourne. He is strongly supported by Milnes Marshall, Roscoe, and Williamson from Manchester, and by Moseley, Lankester, Tylor, and other prominent men at Oxford, not to speak of numerous fellow-students, including G. C. Bourne and H. Balfour, as well as undergraduates whom he has taught. Milnes Marshall calls him the 'best student I ever had'; Moseley refers to his teaching ability, wonderful drawing, and talent for research. The undergraduates testify to his clear way of putting things and his readiness to help them forward to original work, while, once more, his draughtsmanship is lauded. He interviews the Agent-General for Victoria who 'looked as much as to say, "Who the — are you, Sir?"', but contented himself with rather pointedly inquiring about his age; which, it

PLATE II



G. H. Fowler
F. E. Lewin

H. Balfour
W. L. Slater

E. D. Y. Pöde

Rev. H. Johnson S. J. Hickson W. E. Roth H. Y. Oldham
William Hine Prof. H. N. Moseley P. N. Waggett
W. B. Spencer G. C. Bourne Dr. H. W. Acland J. G. Ogle

MORPHOLOGICAL LABORATORY, OXFORD, 1884

ATLAS

may be remarked, was considerably less than that of any of the other five candidates. On January 12, 1887, however, the same official informs him that he is elected to the Melbourne Chair. Exactly a week later he is married to Mary Elizabeth Bowman at Hatherlow Congregational Church, by the Rev. Dr. Powicke, father of the present Regius Professor of Modern History at Oxford; and after the lapse of a bare month the happy couple leave England for the Antipodes. That the lady in question was helping him some months before to colour fifteen hundred lithographed plates by hand in order to illustrate an article that he was publishing is a fact that assumes deep significance in the light of this romantic sequel.

At this point the hero of this sketch recedes beyond the horizon of Oxford and of his present biographer; for, although I eventually visited him in Victoria, he was by that time able to look back on achievements many and various, the antecedent conditions of which are not intimately grasped from a distance. For the matter of that, Spencer himself could not at once readjust his angle of vision. He writes in July from Australia; 'We feel dreadfully exiled . . . Our longings are simply to get back to the old country with its friends and familiar places.' Nor did Spencer ever forget his Oxford days. Thus, much later on, he writes to Balfour from Melbourne:

'It seems ages ago since you and Bourne and Sclater and little Pöde and Tommy Roth and myself were working in the old lab., but it was a very pleasant time, and I wish that those of us who yet remain in the flesh could meet together for an evening's confab. . . . If we had a long enough notice, the original members of the "science club" of 1885 or 1886 might come together. Think this over, and if you can possibly arrange for such a meeting, I will "by hook or crook" be present.'

Fortunately, by Dr. Bourne's kindness, a photographic group is reproduced here which contains many of Spencer's

associates of that period and includes an excellent portrait of Moseley.

Arrived in Australia, Spencer immediately submits plans to the Council of his University for a new laboratory and fittings; 'for which people in general say I may "whistle", but I am not myself quite of this opinion.' Three months later he announces joyfully: 'Government has given me £5,000 towards my buildings, and with perhaps £2,000 more from the University I shall make a beginning.' By February 1888, he can say: 'I have been looking after the erection of my new buildings, having got £8,000 with a promise of some £5,000 more next year. They will be really good when complete—in fact, quite as good as the Owens Biological Department and in some respects better; and these are the best in England.' Thereupon for the best part of a decade he is fully occupied at Melbourne with teaching and organizing. In September 1898 he goes to Sydney to inaugurate the Australian Association for Science, and we note that, whereas a while ago he was sighing for European scenery, he can now exclaim: 'the harbour is perfect, and even though Naples has Vesuvius I think Sydney with its numberless coves and wooded hills is even better still.' In July 1900 he writes: 'Being so far from England I had almost given up the idea of the F.R.S., but am very glad to have it.' Later, he is proposing to get the National Museum into order, since 'there is nothing like trying to arrange a big collection for revealing to you your colossal ignorance'. In short, Australia has conquered him, and he in his turn is thinking out how best he may conquer Australia. For 'Australia has at all events the great advantage that there is no end of pioneer work to be done, and work which, in anthropology at least, must be done soon if it is to be done at all'.

Field-activities, indeed, had always appealed to him, and

he was an ardent member of the Field Naturalists' Club from 1887 onwards. In that year he had visited King Island with a party of its members. It lies between Victoria and Tasmania, and the problem before the expedition was to decide in the light of the fauna and flora whether it belonged to the Continent or, as indeed it turned out, rather to Tasmania. 'It was a new and valuable experience', he writes. Next year he set forth with four companions to visit Croajingolong, in Eastern Gippsland, one of the wildest parts of Victoria. This was done at the suggestion of the eminent botanist, Baron Sir F. Müller, F.R.S.; and it may here in passing be noted that the commemorative medal struck after the Baron's death in 1896, representing him with an acacia spray in his hand and with a waratah on the obverse, was designed by Spencer, who naïvely admits, 'I am rather proud of it'. A very spirited account of this 'trip' was penned by Spencer for the *Victorian Naturalist* (vol. vi, 1889), and the accompanying sketches of the remarkable plant life are likewise his. Again, in 1890, he formed one of the exploring party that visited the almost unknown country extending from Marysville and Woods Point to the Yarra Falls. Already, then, the *Wanderlust* had taken possession of him. But greater things were to come.

In May 1894 Spencer joined the scientific expedition organized by Mr. W. A. Horn of Adelaide to explore the Central region, and spent over three months in traversing some 2,000 miles of the interior, mostly on camel-back. His special concern was with the zoological and photographic part of the work, while Dr. E. C. Stirling undertook the anthropology. But in July at Alice Springs in the very heart of the Continent Spencer became acquainted with F. J. Gillen, henceforth to be a faithful ally whose intimate knowledge of the natives would most fruitfully combine with his own scientific acumen and training in method. And

so in November 1896, after a visit to the same district in the previous year for zoological purposes, when he was fortunate enough to witness the effect on animal life of a heavy rainfall, we find him back at Alice Springs, prepared to go with Gillen as deep as civilized man can hope to do into the institutional and mental life of the now famous Arunta, a Stone-age people. From here he writes to the veteran Fison, who with his friend and coadjutor Howitt had been forward to assist the venture with encouragement and advice, so that Spencer ever afterwards regarded them as his spiritual parents in Australia: 'Gillen they call the *Oknirra-bata*, which means "great teacher".' He goes on to explain that Gillen knows the language thoroughly enough to understand most of what they say, and that the blacks have implicit faith in him. As for Spencer, Gillen has managed to persuade them that he is his younger brother—not such a fib as it sounds, perhaps, in view of their wider use of such relationship terms.

This Frank Gillen was of Irish parentage and showed all the marks of his race—being impetuous, generous, witty, and bubbling over with energy. As Spencer admiringly reports of his colleague to Frazer, 'he is simply indefatigable'. Born at Clare in South Australia in 1855, he entered the telegraph service, and in that capacity had been placed in charge of Alice Springs, important as the repeating station half-way between Adelaide and Port Darwin. But his services as an operator were as nothing compared with his usefulness in managing the natives; for much tact was required in order to humour them—as, for instance, if they were to be prevented from breaking off the insulators along the line in order to chip them into the traditional kind of implement—a tendency satisfactorily countered by supplying them with plenty of broken bottles. As it was, he and his wife, who was devoted to him and his work, and whose interests and

PLATE III



Mr. F. J. GILLEN

NAT. MUS. MELB.

sympathies appear, from Gillen's letters to Spencer, to have been closely akin to his own, were thoroughly in touch with their savage neighbours, and set an example, all too rare, of the spirit in which civilized men should deal with those easily corrupted folk, who remain, culturally, in a state of arrested childhood. Spencer and Gillen continued to be friends and partners right up to the latter's death in 1912—so much so that, when in 1927 Spencer published in his book *The Arunta* a final account of them revised in the light of a recent visit, he affectionately set Gillen's name by the side of his own on the title-page. The book is dedicated to Sir James Frazer, who is called 'our master'.

In 1896, then, as well as in each of the two succeeding years, Spencer and Gillen worked amongst the Arunta at Alice Springs together with the Urabunna tribe of the adjoining Lake Eyre district. The results of their investigations were given to the world in *The Native Tribes of Central Australia* (Macmillan, 1899), the proofs being read by Tylor and Frazer, the latter of whom undertook their final revision and, in fact, saw the book through the press. Tylor, it appears, had helped to find them a publisher, but it was Frazer who spent infinite time and trouble in putting into shape information somewhat hastily transcribed from rough notes, which often were originally jotted down in little better than pidgin-English, as a grateful letter from Spencer freely confesses. From 1897 onwards Spencer and Frazer, the anthropologist of the field and the anthropologist of the study, are in constant communication, no doubt with great advantage on both sides. Indeed, Spencer's long letters to the author of *The Golden Bough*, some of them written from strange addresses such as Charlotte Waters or Barrow Creek, provide a running commentary on his progress as a discoverer, and would be well worth publishing in full if only for their methodological value, as showing how a well-trained

mind labours to make theory fit the observed facts. Here, unfortunately, their scientific interest, which is paramount—for Spencer is the least egotistical of men—must be ignored, and the occasional passages of a biographical nature alone noticed. Thus the opening part of the first letter of the series, dated July 12, 1897, may be cited in full, not so much because it throws any fresh light on the history of Spencer's association with Gillen as in order to illustrate his desire to give his comrade the lion's share of credit for their joint achievement:

'My friend Mr. Fison has kindly sent me on your letter in which you make inquiries with regard to the joint work of Mr. Gillen and myself. First let me say that the work which we are doing is due in the first instance to Mr. Gillen. He had for some years been taking a great interest in the Central Australian natives, and the result of his work up to the time when we met has already been published in the report of the Horn Expedition to Central Australia, vol. iv. At the close of that expedition I spent some time with him, and having been originally interested in matters anthropological by my old teacher Professor Moseley and also by Dr. Tylor, was able to suggest to him lines of inquiry with regard to totems and other matters of interest. Then he suggested that we should work together, and gradually the thing has grown until now I think that we are in the position to describe in detail, and with I trust comparatively few errors, the organization and customs of one tribe, and have secured also a lot of information with regard to six or seven others. Last summer I spent four months with Mr. Gillen living with the Arunta tribe, the members of which had gathered together close to a telegraph station of which he had charge on the overland line from Port Darwin to Adelaide. It is as nearly as possible right in the centre of the continent. We have fortunately been just in time to record the details of this tribe—for it is astonishing how rapidly customs die out the moment the white man comes on the scene. Unless we can in some way set to work seriously we shall be too late to do much in Australia, for despite the work of men like Howitt and Fison, we know as yet very little. I need hardly say that to these two Gillen and myself are much indebted. Mr. Gillen has always encouraged the natives to preserve all their old customs, and in his

position as sub-protector of the aborigines has had a splendid chance of acquiring influence amongst them. They regard him as their man, and by means of the, perhaps under the circumstances, excusable device of calling myself his younger (tribal) brother, I was adopted as a member of the tribe and allowed to see everything. I have often thought that much of our work would be of interest to you, and so am venturing to write direct to you instead of through Mr. Fison.'

So we may imagine the two friends settling down to explore patiently and thoroughly the recesses of the native mind, as obscure and tortuous as those of some prehistoric cavern. The following extract, though it refers to later work among the Urabunna, will yield some idea of their methods:

'We got into touch at once with half a dozen ancient natives and took them off to a retired spot where we made a camp. At this time of the year the weather is simply perfect—nothing but brilliant blue skies, more brilliant even than those of Italy, and lovely clear nights. I wish you could have been with us for a day or two. Our camp consisted of a brake of boughs to protect us from the cold wind at night, and on the leeward side of this we spread our rugs and slept out in the open with a good fire to keep our toes warm. The natives pitched their camp amongst some acacias close by, and I think they enjoyed themselves as much as we did. Every morning we had two or three hours with them, and then sent them off for a ramble amongst the hills. After that we had another hour or two with them, as you cannot safely work the savage brain for too long at a stretch. Then when evening came on we lit our fire, and the natives theirs, and Gillen and myself discussed matters over our pipes, and listened to the blackfellows singing away, as they always do at night, at their corroboree songs, until we fell asleep.'

Working in this assiduous way, and on the best terms with the natives, they compile masses of information which in parts, as Spencer apologetically explains, might seem 'decidedly tedious'. 'On the other hand one can never feel sure that an apparently trivial fact may not be of service to some other worker; and, in addition, the very minuteness of the details seemed to be of interest and importance for the under-

standing of the mental condition of a typical savage tribe like the Arunta.' Thus, in offering their work for publication to Mr. George Macmillan, Spencer can truly say that it 'gives a much more detailed account of various features such as the totems, initiation rites, mourning and burial customs, &c., than has yet been given in the case of an Australian tribe'. The material was all the more new and valuable because he and Gillen, being treated as fully initiated members, were consequently enabled to participate in all the sacred lore which must be strictly kept from outsiders. Naturally it is not easy to obtain direct testimony as to the estimate formed of the white man by those who so generously adopted him as tribal brother, though the fact speaks for itself. From a later period, however, may be quoted part of a letter received by Spencer from the Larakia head-man who, with Mr. Godfrey of Kahlin Compound, Darwin, had been enforcing law and order in that part of the world; for it exhibits Spencer as native eyes saw him—'him goodfellow, him talk true'.

'First time before Mr. Godfrey come blackfellow drunk every night. Some fellow Mr. Godfrey give him hiding. Some fellow him send him Melville Island. Some fellow him chain him up all night all day same fowl alongaleg, and everybody laugh too much along that blackfellow. Just now him frightened get drunk, him frightened make fight now. Mr. Godfrey him my mate him never sleep hard that fellow, savee blackfellow too much. Suppose him fight, him all same Devil fight, finish him all same Hospital woman. We two fellow boss this place. I like see you come back quick. Mr. Godfrey him boss all same you, him goodfellow, him talk true all same you. Only some blackfellow young fellow not good boy, he must growl him proper, him my mate. This place more better now. [Signed.] Solomon him mark.'

It is hardly necessary to say that when at length the first book of Spencer and Gillen saw the light in 1899, it took the scientific world by storm. Of course, controversy forthwith raged as to the meaning to be put on their results; but all were agreed that the evidence itself was as sound as honest

and profound research could make it. Sir James Frazer, as might be expected from one who had actually served as their co-worker, though from the other side of the globe, gave whole-hearted support to their findings, even when these extended from fact to theory; and the second edition of *The Golden Bough* (1900), which in so many ways modifies and, one may truly say, enlarges the outlook of the first edition, might be said to place the Arunta in the very centre of the picture. When in due course he receives his copy of the work in question, Spencer is frankly delighted, rejoicing alike in the encyclopaedic range of the matter and in the literary form. It is but human, however, that he should find less to admire in the writings of authors such as Andrew Lang or Durkheim, whose views about Australian origins are not so sympathetic; and it has certainly to be admitted that he, and, with him and through him, Frazer, were in a better position to pronounce on the facts at first hand. Again there later appears a rival on the spot in the shape of the German missionary Strehlow, who working in the south-west of the Arunta country, a part at the time unvisited by Spencer, obtains from his converts a somewhat different version of the native beliefs, and one which Spencer suspects to be less authentic, because more contaminated with civilized, not to say Christian, ideas than his own. On such matters, then, of disputable interpretation which are inevitable in the study of the mental life of mankind Spencer discourses freely in numerous letters to Frazer as well as to Henry Balfour, myself, and others; but this is not the occasion on which to go into technical questions.

In 1901 Spencer and Gillen embarked on the last expedition that they were to make together, and spent twelve months in the field, traversing the Continent from railhead at Oodnadatta along the telegraph line to Powell Creek, and then branching off eastwards to Borraloola on the Gulf of Carpen-

taria. It was necessarily a costly expedition, and, over and above the £1,000 munificently contributed by Mr. David Syme of Melbourne for the purpose, Spencer had to find some £500 out of his own pocket; and Spencer was no Croesus. Apart from financial worries, moreover, there were many preparatory troubles to be faced—a year's leave of absence to be obtained from the University Council (for which Frazer paved the way by a request addressed to the Victorian Government); kit and transport to be organized; and, above all, the Clerk of the Weather to be propitiated. For in February, a month before they actually were able to make a start, Spencer writes to Frazer:

'Gillen and myself are hoping to work across into Queensland so as to link on the Central Tribes with those amongst whom Roth has been working. Most unfortunately the present season is a terribly bad one in Central Australia, and for more than a thousand miles there is not a drop of water or a blade of grass. It would be simply foolhardy for us to set out under these present conditions. Our horses could only live for a few days—even camels are out of the question—and so we have decided to wait for a time in the hope that rains will fall during the next month. . . . Meanwhile I feel equal to the slaying of half-a-dozen Priests of Nemi, if only this would ensure rain in Central Australia.'

Nevertheless, they got off from Adelaide on March 15, and three days later were on trek from Oodnadatta, heavily loaded, and 'tormented by myriads of flies which make work almost impossible'. By June they are past the confines of the Arunta and among new folk, the Kaitish; while by September they have nearly done with the Warramunga, a fresh tribe living another hundred miles to the north. 'Time is slipping by, but we cannot work more quickly than we are doing. Natives are very difficult people to worm reliable information out of, and we have to keep working back.' Or, again, 'We are getting on very fairly well, but wade through endless traditions for here and there a speck of something of real

value.' Once more, 'We are simply hard at work from morning till night.' The explorers are in the best of health, but soon, as they near the Gulf, will be 'in the midst of heat, flies and mosquitos'. When they actually reach Borraloola, 'a most deadly dull, monotonously uninteresting spot', Spencer is 'feeling much like a jelly fish stranded on a damp beach' and longs to 'see something pretty', and, in short, to get back home. 'I think that the Anthropological Institute might appropriately award a vote of thanks to our wives, to whom I fear the anxiety and waiting are rather trying.' He adds, 'However, the natives do not leave us much time to lament the lack of scenery, and now I am contemplating how to write up all our work, and at the same time manage to get through a year's hard grind of lectures and laboratory work.' For even the happiest home-coming has its drawbacks; and four days after he reached Melbourne lectures began.

Nevertheless, by the beginning of the following year, the book eventually entitled *The Northern Tribes of Central Australia* (Macmillan, 1904), and dedicated gratefully to David Syme, is well on its way towards completion, and Spencer can write to Balfour:

'I have packed the family off to the seaside, and am very hard at work writing up our results. It is only when you begin to do this that you realize your ignorance. However, I do not think that we could have done much more than we did, but of course with our present knowledge we could do much more if we could only go over the same ground again. However, this is not possible. The last expedition added a good many grey hairs to my head, or rather gave me my first experience of these; and another one might turn me white. The Northern Territory of Australia is all very well if you have not to work hard; but when the exertion of writing makes you perspire, so that the water streams out of you, you can understand that work of any kind is very difficult. Also you cannot get native porters, as in Africa, to carry along soda-water and champagne and other luxuries.'

In April, when the manuscript has gone off to the publisher,

he tells Frazer: 'It has cost me the whole of the Long Vac., and every spare minute during the year, and I am not at all satisfied with it; and were time no object would like to start afresh. When you read it please remember that it has been written under rather hard conditions.' As a matter of fact, the second book proved no less valuable than its predecessor in the eyes of all serious students of anthropology; though it was perhaps less startling in its effect upon their opinions, inasmuch as it abundantly confirmed the former account of beliefs and practices that to many had seemed well-nigh incredible on their first announcement.

It turned out that Spencer was wrong in assuming that a few grey hairs, or even seven years of routine work as President of the Professorial Board of the University, could exorcize his roving spirit. Although a scheme for a further journey with Gillen for the purpose of studying a desert tribe out to the south-west of Lake Eyre came to nothing, yet in 1911, when Gillen was already helpless beneath the malady that in the next year led to his death, Spencer was induced by the Commonwealth Government to become leader of a small expedition dispatched by them in order to make preliminary scientific investigations into conditions in the Northern Territory. Thus once more he repaired to the Gulf of Carpentaria, though this time he started northwards from Darwin and turned east along the Roper River. In December he was requested by the Commonwealth Government to return to the Territory for a year in the official capacity of Special Commissioner and Chief Protector of Aborigines. The opportunity of studying the natives under such favourable circumstances was not to be resisted. The Administrator of the Territory, Dr. J. A. Gilruth, was his frequent companion, and did everything that he could to further his designs. These included a visit to Melville Island, at that time destitute of white inhabitants except for one

celebrated buffalo hunter, Joe Cooper, who helped him to get into touch with the blacks. Another mighty hunter, Paddy Cahill, accompanied him to Bathurst Island as also among the Kakadu and other tribes of the adjacent parts of the Continent. Thus his wanderings led him far from beaten tracks, as testify the pages of *Native Tribes of the Northern Territory of Australia* (Macmillan, 1914), so remarkable for their descriptions of the customs of hitherto unknown peoples and for the illustrations of their dances, weapons, and graphic efforts. In a letter to me written after his return to Melbourne, when he is busy putting his notes together, he regrets that so much of his time was taken up with departmental work, and that an accident—it was a spear-wound on the shin, but self-inflicted—caused him to lose two of the best months of the winter, and nearly to lose his leg as well.

‘On the whole’, he continues, ‘I had a fairly successful time, but two or three more months would have made a great difference to me. As you will understand, it is no easy matter to get much out of the natives in a short time. By good fortune, both on Melville Island and on the Alligator Rivers I was with men who knew the language and were trusted by the natives; and after a little experience I got enough knowledge to be able to guide them, and also to understand a good deal of what the natives were saying. . . . We had three learned men from whom we gained much information.’

In a charming appreciation of Spencer’s personality contributed to an Australian newspaper at the time of his death by Dr. Gilruth, allusion is made to these times as follows:

‘It was the great privilege of few to know him as I knew him. For months we were thrown together in the closest intimacy with few literary and no scientific associates. For weeks we were virtually alone, travelling together through vast spaces of unoccupied Northern Australia. For days the journeyings were strenuous, the heat was intense, amenities of civilization were lacking and ordinary comforts absent. At times there was danger—fear of disaster from lack of water. Yet never was Spencer, who had previously experienced similar vicissitudes, queru-

lous; always he was the genial, courteous, kindly, considerate gentleman, using the word in the truest sense, whom his associates of the University knew and loved. When a show of temper or of petulance might have been easily understood and readily forgiven it was rarely exhibited, no matter how great the provocation. Perhaps his unfailing courtesy and considerateness towards subordinates were his most endearing human qualities in such surroundings. In the prosecution of his scientific investigations time, trouble, and personal inconvenience did not count. So painstaking was he that I think he excelled in scientific caution. To see him sitting under the "piebald" shade of a scanty-foliaged tree, with little shelter from the torrid sun, examining and cross-examining several grimy, elderly natives, who had a very limited knowledge of pidgin-English, patiently sorting out the information so difficult to secure from individuals more anxious to please the "bigfellow white-man" than to convey facts, was to receive an object lesson in scientific single-mindedness. To realize that the information so laboriously acquired and so meticulously noted would be checked again and again that there might be no error enhanced one's admiration of the simple, unassuming student of his aboriginal brother. On my return to camp from a bush trip it was no surprise still to find him patiently cross-examining his "cronies", arranging and rearranging the wax matches with different coloured heads, which he used to represent to his witnesses the varied individual relationships and groupings of family or totem. Often far into the warm night, by the light of a hurricane lamp, he would sit preparing his specimens of animals and plants for later more detailed examination, or for the Melbourne Museum, to which he was so attached and of which he was so justly proud.'

It remains to be noted that Spencer's interest in the scientific study of the natives was in no way allowed to interfere with his practical efforts as their official Protector to promote their welfare as best might be done under conditions of heart-breaking difficulty. His reports to the Minister for External Affairs show with what deep concern he viewed their rapid degeneration under the stress of contact with the settlers, Asiatic as well as White; while at the same time his well-trained mind harbours no sentimentalism, but faces the facts

in search of some truly practicable policy. A scheme for establishing native reservations, so plausible when considered in the abstract, would not in his opinion work:

‘It is useless to reserve large tracts of country with the idea of forcing the aboriginals to live on them. In the first place, the aboriginal in his natural condition is a nomad; he must wander, and it would need a small army of watchers to keep him anywhere where he did not want to stay. In the second place, every tract of country is regarded as belonging to some particular group, and no one who does not belong to that group has a right to go there or hunt over it without the permission of the owners. To attempt to mix different tribes on a reserve, even if they could be kept there, would result in constant bloodshed.’

The upshot is that he recommends the establishment of Aboriginal Stations, where under Government control the natives can be gradually taught to abandon their wandering habits, and to settle down in permanent quarters supported by regular food of their own growing. Those too old to be taught must be treated kindly, while the younger folk are to be gradually educated in this new way of life. He points out, further, that it is not enough for those who are in charge of such instruction to be well-meaning. They must have had the special training that will give them insight into mental conditions and cultural habits very different from their own.

Though Spencer would thus cure the aboriginal of his wander-spirit, the physician was unable to heal himself; for he intended this expedition to the Northern Territory to be his last. Reviewing his work for Frazer’s benefit he says:

‘My time there was so much occupied with routine work as Head of the Aboriginal Department, and I lost so much valuable time, at the best time of the year for travelling, owing to an accident to my leg, that my results are by no means what I wish they were. However, they are, I think, good so far as they go, and probably represent my last contribution to field anthropological work, because it is not likely that I shall be able to go into the wilds again. Neither my wife nor myself are growing any younger. My wife has been most self-sacrificing in regard

to my work, and has had, as you can imagine, many anxious times. She is not in good health, and it would not be right for me to go out again; so I must regard my field work as finished—except perhaps for minor work which will not mean long absence from home.'

To this good resolution he remained true for a decade, during which he busied himself with plenty of useful, if less exciting, tasks at Melbourne. In 1923, however, he accompanied Dr. L. Keith Ward, the Government Geologist of South Australia, on a fresh visit to the Macdonnell Ranges, a considerable area of ground being covered. On this occasion he was delighted when an old Arunta, whom he had seen last in 1896, greeted him with the words, 'Unta, Yinga, Udnirringita'—that is, 'You and I are Witchetty Grubs', and thus recognized him as a fully initiated member of his own totem. Finally, in 1926, Spencer repaired once more to Alice Springs and, sadly conscious as he must have been at every turn of the absence of his friend Gillen, exerted himself to put the finishing touches to their work by revising it thoroughly and, so far as it was any longer possible in the demoralized condition of the natives, to amplify it as well. On this latter journey, as one learns from an article in *The Australasian*, 'he travelled in an open dray laden with provisions for a Central Australian station, took "pot luck" for such food as he could get, and lived again among the Arunta as one of them'. Spencer was lucky to find at the station an old friend in Sergeant Stott, with whom he had worked many years before at Borraloola on the Gulf. With his help he got into touch with another old acquaintance of 1896, this time a man of the Irriakura (a plant bulb) totem, together with two other old men, each reckoned an Oknirrabata or sage, the one being a Wild Dog, Gnoilya, and the other, a Wild Cat, Achilpa. These latest researches were incorporated in *The Arunta: a Study of a Stone Age people* (Macmillan, 1927), and go to prove that their earlier account of this people was

in all essentials correct; thus incidentally rebutting various strictures passed thereon by those who took their cue from Strehlow. Thus, in particular, the charge of having overlooked a High God as an authentic feature of Arunta religion can be met by Spencer with the positive statement that no such concept is to be found among them. 'The word Alchera is not applied to any Being, either mythical or actually existing. Its use by the missionaries as the equivalent of God is wrong and misleading.' It may be added that the book also contains panoramic sketches, secured during the previous visit to the Macdonnell Ranges, which afford an excellent idea of the main features of the Arunta country. It is ever thus that the artist in Spencer comes to the aid of the anthropologist. I may, perhaps, be allowed to mention here that my first experience of the cinematograph, used moreover in the most ingenious conjunction with the phonograph, was provided by Spencer at Oxford when he brought back from his Trans-continental expedition of 1901 these visible and audible records of the unimaginable human life of the Central deserts.

We have now completed our hasty survey of Spencer's exploratory activities in Australia. Their scientific importance will be fully appreciated by those who are at the trouble to make a careful study of the four treatises already mentioned, each of them a masterpiece of descriptive ethnology. Less technical in scope, but hardly less illuminating, inasmuch as they exhibit the child of wild Nature in his dependence on an environment of which the geographical and zoological features are delineated with a sure hand, are the two supplementary works, *Across Australia* (Macmillan, 1912) and *Wanderings in Wild Australia* (Macmillan, 1928). It was Spencer's unfailing habit to post off to his family a continuous diary of his wayfaring, adorned with dashing sketches of everything that took his eye. Thus, apart from

the notebooks devoted to the sterner purposes of science, he had the wherewithal to revive the full memory of his more casual experiences when, turning from analysis to narrative, he would unfold the story of his travels; though it is to be noticed that his epic seems destitute of a hero, so little does he obtrude his personality on the reader, as if the recital of the bare facts were wonder-tale enough.

It remains to take note of Spencer's professional and other avocations at Melbourne. Although it is doubtless to his anthropology that he will chiefly owe his permanent fame, yet officially and to some extent even in his own eyes this was a side-line. Never did he allow it to interfere with his more immediate duties. In a word, he deserved well of his University, even as it deserved well of him in allowing him to throw a substantial part of his weight into what were in a strict sense secondary pursuits. After all, it would be a short-sighted policy on the part of any teaching body to keep its leading men with their noses continually to the grindstone. The hard-worked professor from time to time needs a holiday, even if it take the form, as in such a case it is likely to do, of more hard work, for the sake of a change. Spencer refers several times in his letters, though always quite uncomplainingly, to academic duties that keep him in his laboratory from 9 a.m. to 5 p.m. throughout the week, so that he looks forward to his Sundays as his only intervals of freedom. He also mentions examinations as affording a certain vexation of spirit to himself no less than, presumably, to others. The constant labour of teaching and research, however, never prevented him from taking a sincere interest and, as far as possible, participating in the various activities of the students of the University. Dr. G. Sweet, one of his old pupils, speaks of his personal knowledge of individuals, and of his willingness to give his undivided attention to their problems, and Mrs. T. à Beckett, another pupil, has

described how ably he organized their various clubs and arranged the functions connected with them. The University Sports Union was especially near his heart, and the members presented him with an inscribed silver loving-cup, as a token of their affection and respect. The numerous pupils who sat at his feet during his thirty-two years' occupancy of his Chair—for he resigned it only in 1919—were enthusiastic admirers of one who could not only instruct but likewise inspire. As Professor Scott has well said in *The Australasian*:

'Old students of biology at the University of Melbourne tell of the swift dexterity with which Baldwin Spencer would take a few coloured chalks and illustrate on the blackboard his remarks on the protective colouration of birds and animals, or the function of brilliant floral colour in facilitating the fertilization of plants. He was, indeed, a very great man of science, and all the greater in that field because he had the soul of an artist.'

Again, his services cannot be over-praised as a promoter and organizer of those vast collections of Australia's indigenous marvels at which, in company with the rest of the British Association in 1914, I gazed with feelings that verged on awe; so little had Europe prepared one for such a sight. In 1899, on the death of Sir Frederick McCoy, who for over thirty years had been Head of the National Museum, Spencer undertook to be its Honorary Director; his first act being to recommend its transfer to a new and more commodious building. Facing manfully the vast toil entailed by the consequent rearrangement—and here no doubt his early experience with the Pitt-Rivers Museum at Oxford stood him in good stead—he saw to it that the Australasian exhibits were assembled together and given all the prominence that they deserved; while he quietly added to them many thousands of zoological specimens collected and preserved by his own hand. He likewise contributed a rich store of

photographic and phonographic material gathered by himself in the course of his wanderings. To fall back on my own impressions of the Museum, nothing was so amazing as the Spencer Hall, where his ethnological spoils are displayed in all their gorgeous variety; for no one who has not actually seen could imagine what a show can be afforded by the Stone Age, when not only the more or less enduring materials, the stone or the wood, are preserved, but, surviving all difficulties of transport, the more delicate decorations, made up of hair, fur, feathers, and earthy paint, stuck together with some kind of doubtful gum or it may be with human blood, are set forth as they veritably figured in some native ceremony unwittingly by any save the initiated—with Spencer among them. For some specimens are not easily obtained, as Spencer informs Balfour when making him a present for the Pitt-Rivers of various Australian objects, including a Nurtunja or sacred pole of the Arunta.

‘When the Central Australian is civilized, he will doubtless make this for sale. Meanwhile the one sent is a genuine one, and it is a most difficult thing to secure, because it is made for the performance of a special ceremony, and is then under ordinary conditions taken to pieces; because the human hair which is wound round it belongs to certain individuals who are not at all anxious to part with it, and also the same Nurtunja is never used for the performance of more than one ceremony.’

Another letter to Balfour throws a sidelight on Spencer’s interest in his museum work.

‘Your letter reached me when I was attempting to prepare a lecture that in a weak moment I consented to give on the Stone Age in Australia. As yet I have been collecting “recent” material together with, very rarely, older—but the latter is very difficult to find. However, I am going to devote time to this as soon as possible. As to recent stuff, I have now, apart from uncounted rough flakes, &c., some 16,000 specimens. I think that amongst them I have Chellean, Mousterian, Acheulean, and of course Neolithic forms, and *all* of

them at the present day are in use among the natives. When the British Association comes out next year I hope to be able to show the anthropologists a series of stone implements that will astonish them.'

Another of Spencer's main interests lay in art, and notably in Australian art. It has been already pointed out that he was himself no mean artist, having indeed at one time thought of devoting his life to that pursuit. Small wonder, then, that he was sympathetically disposed towards such young persons as he saw around him struggling to achieve success in that most precarious of professions. Though not a wealthy man, he devoted all the money that he could spare to the support of local talent. His shrewd judgement in regard to the quality and promise of their work was amply confirmed by the subsequent success of many an Australian painter now famous; as also by the fact that when, through sheer lack of wall-space, Spencer had to pass on some of his purchases to others, his prescience reaped its just reward. It would seem, indeed, that before he gave them a lead, Australians in general had put but little faith in the efforts of their own artists; and if to-day a decisive change in public opinion has taken place, Spencer deserves full credit for having been forward, as Bacon says of himself, 'to ring a bell to call the other wits together'.

It is hardly necessary here to catalogue the honours that came to Spencer—with little seeking, it need hardly be said, on his own part. He was greatly pleased when his old College, Exeter, in 1906 elected him Honorary Fellow—a status likewise conferred on him a decade or so later by Lincoln College, his second Oxford home. That he was in no way inclined to over-value his own deserts comes out clearly in a letter written in 1913 to Henry Balfour, when the latter was about to present an armorial window to the Hall of Exeter College to commemorate some of the men of

science who have been its *alumni*, and proposed to place Spencer's name among them.

'Needless to say, I very much appreciate the honour that you propose to do me; the only thing is that I do not think it quite right or justifiable that I should appear side by side with men like Lankester and Lyell. I know of course that, thanks to opportunities that come to few workers, I have been able to do some good anthropological work; and the capacity to do this I owe to Moseley and Tylor. It was just the merest chance that, when I was demonstrating for Moseley, the Pitt-Rivers Collection was left to the University, and Moseley asked me if I would help him pack it up. Of course I went, and for about a month I was daily with him and Tylor; and from both of them, but especially the latter, I learnt much—little dreaming that I should ever come to Australia. Any work that I have done has been due to this initial stimulus of Moseley and Tylor; and later, and still more, to that of Frazer.'

In the window in question Spencer's name appears in association with the arms of the University of Melbourne. Nearby in the same Hall hangs a striking portrait of Spencer in his academic robes painted by the Australian artist W. B. McInnes, and presented to Exeter College by Spencer's daughter, Mrs. Young. Another fine picture of him on a somewhat ampler scale by the same hand was presented by some of his old students to the University of Melbourne. Spencer was made a C.M.G. in 1904, and a K.C.M.G. in 1916. He was doctor alike of Science and of Letters; he became Honorary Fellow, Medallist, Corresponding Member, and so on, of many learned societies, both British and foreign; he acted as President of various important organizations in Australia, including more than one athletic club; and, finally, for his services to Art, he received in 1926 a distinction which probably gave him as much pleasure as any, in the shape of the medal of the Australian Society of Arts.

We come now to the last act of the drama of Spencer's

PLATE IV



SPENCER IN 1927

NAT. MUS. WELD.

life, and little need be added here to the story unfolded by the Journals themselves. It might seem rash that a man of sixty-nine should brave the rigours of the Horn; but, as Novalis says, character is destiny, and Spencer had the Viking temper that despises a 'straw-death'. Apparently it had been a dream of his early years to follow in the footsteps of the Naturalist of the 'Beagle'; and Darwin's Fuegians, standing derelict at one of the dead ends of the globe, were in a sufficiently like situation to the Australian natives in their secluded retreat to offer analogies that, as a loyal upholder of the Comparative Method, Spencer must all his life have longed to examine at first hand. He left England in February, having signed on as one of the crew of a small cargo-boat that was to bring him as near as possible to his objective. A little later he writes from Magallanes—I reproduce the passage from an article by Mr. Frank Rinder in the *Glasgow Herald*—

'Every one seems to think that I have come too late to get hold of any Indians, most of whom have disappeared. But I am going to have a hard try, and on Monday next start off in a little schooner for a place called Ushuaia, on the Beagle Channel, right at the south of Tierra del Fuego. Winter is coming on, and once I get there, where I believe there are two or three old Indians left, I may be marooned for two or three months. Anyhow I shall be amongst the snow mountains, and shall have plenty to look at if it ever stops raining and snowing. . . . London and other places seem a long way off.'

The end came on July 14, of a sudden heart attack, in a small snow-bound hut on Hoste Island. Hither he had repaired from more comfortable quarters at Rio Douglas on Navarin Island in order to hunt up an old Yaghan woman who was reported to have some English. With her help he hoped to tackle a reputed 'witch' at Rio Douglas; thus to the last pursuing his well-tried method of acquiring the tribal lore directly from the lips of its repository, the *Oknirra*—

bata or doctor. Had Spencer lived, no doubt the wise men and women of the ancient culture would have unburdened themselves to the wise man of the modern; for their intuition would tell them 'him goodfellow, him talk true'. Indeed, those simple words might serve as Spencer's epitaph.

For Baldwin Spencer, as I view him, was the man of science at his best. There was room in his life for devotion to family and friends, but otherwise it was all work—not tame work like money-making, but fiery, impassioned work, as all truth-making is for the lover of truth, more especially if he is large enough in soul to be a lover of beauty at the same time. If, then, Spencer found both truth and beauty in Australia in overflowing measure, it was no doubt partly because they were there waiting to be found; but partly also because he went forth gallantly to seek them. A man cannot create out of nothing, but that inevitable condition is no offset to the joy of creation, which is the supreme reward of being alive and active. Moreover, science, being a truth-making of the kind that is primarily concerned with fact, provides a discipline that fosters a certain sobriety of disposition; for the man who has learnt not to take liberties with Nature will be the less likely to play the prig with his neighbours. Spencer, then, as far as I can read his life, was, thanks to his devotion to his work, both happy and void of all conceit. Complex as were his intellectual interests, he remained simple at heart, with the simplicity of the knight-errant who identifies his very being with his quest; and, when such a knight-errant rides on beyond the verge, we bare our heads.

AT. 43. 121.



TIERRA DEL FUEGO AND ISLANDS TO THE SOUTH

III
JOURNAL OF THE EXPEDITION TO
TIERRA DEL FUEGO

NAT. MUS. WASH.

The Cape Verde Islands when there was scarcely a speck of green
 then or until we sighted, away on the horizon, what looked like
 a little, or rather huge, black pole that gradually attached

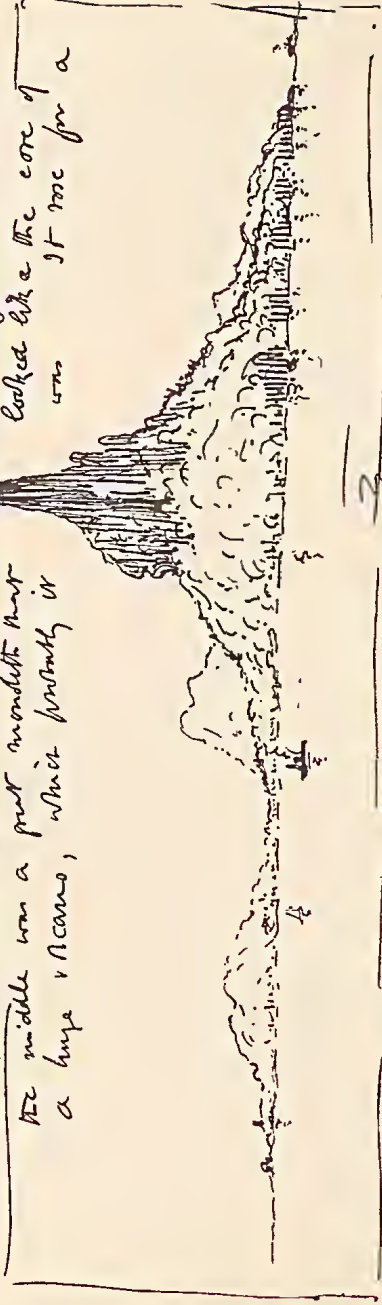


itself to an island — (Fernando Noronha)
 which I remember having heard of in
 the days of my youth at school.

The day was lovely so the
 Captain took us close in & it looked
 something like this. In

the middle was a great mole-like mass
 a huge volcano, which probably it

looked like the core of
 was it rose for a



Norman felt so
 much higher than it really was.

That, coming straight in out of the sea, it looked
 after this we coasted along the
 Brazil. Then the N. Argentine coast — all of it really dull — until we came
 to a little grassy plain just at the mouth of the Dour River — a narrow
 pretty plain & in a volcanic mountain some early explorers when

FIG. 1. FERNANDO NORONHA (facsimile from a letter to a friend).

JOURNAL OF THE EXPEDITION TO TIERRA DEL FUEGO

By SIR WALTER BALDWIN SPENCER

(with Miss Hamilton's Narrative)

February 17, 1929. Left London for Newcastle, and went on board 'Tudorstar' (Blue Star Line) on Monday, February 18. 'Tudorstar' left South Shields under Captain G. Owen on Tuesday, February 19, at 1.30 p.m. Saw Madeira Light on Wednesday, February 27, at 7.30 p.m., Cape Verde Islands on Monday, March 4, and on Saturday the 9th, passed St. Paul's Rock during the night. Sunday the 10th, Fernando Noronha (fig. 1). Saturday the 16th, crossed Tropic of Capricorn at 8 a.m. Arrived at Puerto Deseado on Monday, March 25, and left on Monday, April 1, at 3 p.m. Arrived at St. Julian on Wednesday, April 3. For shingle beds, oysters in beds, &c., at St. Julian, see Darwin, ed. xii, p. 175.¹ Left St. Julian on Saturday the 6th, and

¹ The geology of Patagonia is interesting. Differently from Europe, where the tertiary formations appear to have accumulated in bays, here along hundreds of miles of coast we have one great deposit, including many tertiary shells, all apparently extinct. The most common shell is a massive gigantic oyster, sometimes even a foot in diameter. These beds are covered by others of a peculiar soft white stone, including much gypsum, and resembling chalk, but really of a pumiceous nature. It is highly remarkable, from being composed, to at least one-tenth part of its bulk, of Infusoria: Professor Ehrenberg has already ascertained in it thirty oceanic forms. This bed extends for 500 miles along the coast, and probably for a considerably greater distance. At Port St. Julian its thickness is more than 800 feet! These white beds are everywhere capped by a mass of gravel, forming probably one of the largest beds of shingle anywhere in the world: it certainly extends from near the Rio Colorado to between 600 and 700 nautical miles southward; at Santa Cruz (a river a little south of St. Julian) it reaches to the foot of the Cordillera; half-way up the river its thickness is more than 200 feet; it probably everywhere extends to this great chain, whence the well-rounded pebbles of porphyry have been derived: we may consider its average breadth as 200 miles, and its average thickness as about 50 feet. If this great bed of pebbles, without including the mud necessarily derived from their attrition, was piled into a mound, it would form a great mountain chain! When we consider that all these pebbles, countless as the grains of sand in the desert,

NAT. MUS. AMER.

arrived at St. Cruz at 6.15 p.m. on the same day. Left St. Cruz on Thursday, April 11, at 10 a.m. Entered Magellan Strait at 6 a.m. on April 12, reached First Narrows at 10.45 a.m., and anchored off Magallanes at 6 p.m.

Magallanes (from a letter to a friend).

'Punta Arenas, now called Magallanes is quite a picturesque little city, partly modern, with the really fine houses of sheep magnates built round a Plaza, and partly old fashioned, with wide straggling streets and wooden or corrugated iron houses, most of them fortunately painted red and green and yellow and blue. The hills behind are already beginning to be capped with snow, and from our windows in a very comfortable hotel, we look across the water to Tierra del Fuego and, down the streets, can see the tops of snow-mountains that form the southern end of the Andes on Tierra.

First of all the Captain conducted us to the British Consulate, where we were formally signed off as members of the crew of the "Tudorstar", and my Purserial life came to an end. Then we were taken in charge by the Police, and in the head station were detained for some time. It seems that no stranger is allowed to enter the gates of Chile, or at least to remain in them for more than eight days, without securing a "Carnet". First of all they catechized us minutely as to our fathers and mothers, especially the latter, and took down the names of all our brothers and sisters. They took finger prints of all our fingers and thumbs in duplicate. I expected they would go on to our toes, and was rather anxious because there were gaping holes in both socks, but fortunately they stopped short of this.

They then ushered us separately into a small chamber with electric lights all round, and took full face and profile views with a little scroll bearing an identification number hung down, Japanese fashion, beside

have been derived from the slow falling of masses of rock on the old coast-lines and banks of rivers; and that these fragments have been dashed into smaller pieces, and that each of them has since been slowly rolled, rounded, and far transported, the mind is stupefied in thinking over the long, absolutely necessary, lapse of years. Yet all this gravel has been transported, and probably rounded, subsequently to the deposition of the white beds, and long subsequently to the underlying beds with the tertiary shells.—Darwin, *Journal of Researches into the Natural History and Geology of the Countries Visited during the Voyage of H.M.S. 'Beagle' round the World, under the Command of Captain Fitz Roy, R.N.*, cap. viii.

our heads. . . . This over, they politely invited us to wash our hands with most excellent pumice soap. I tried to secure the recipe, but apparently they did not understand my Spanish. In the end we secured what is officially styled a "Cedula de identidad personal—Gabinete de identificacion", or for short, a "Carnet". This is a folded paper enclosed in a small leather case that cost 10s. altogether (I could have got a cheaper Carnet for 3s. in a cardboard case, but plunged on the more expensive one as being more likely to impress any policeman who might want to run me in). It appears that, armed with a Carnet such as this, you can do anything you like in Chile. The document within contains a full face photo of myself, a print of my right thumb (*pulgar*), and certain particulars of a private nature likely to be useful to the police. The most interesting is my name written as Señor Walter Spencer-Circuit, the latter being the maiden name of my mother. It seems as if these Chilean folk count descent in the female line just as they do in some of the most primitive tribes in Australia. There is one line devoted to personal peculiarities, to discover which they had scrutinized us most carefully. Mine contains the words "no tiene", which means, colloquially speaking, "he ain't got none".

From Saturday April 13 until Saturday, May 4, remained at Magallanes in Hotel Cosmos, owned by Juan Toth y Cia.

Account of the voyage to Magallanes.

*Care of Anglo-South American Bank,
Magallanes, Chile, April 24, 1929.*

My dear Balfour,

After a somewhat protracted voyage of ten weeks on a cargo—frozen mutton steamer—I arrived here. This place used to be called and still is called on most maps Punta Arenas; it has now changed its name to Magallanes, and is quite an interesting spot. As my boat, the 'Tudorstar' (Blue Star Line), did not officially carry passengers, owing I think to the fact that a higher rate of port dues is charged to passenger ships, I had to be 'signed on' at a place on the wharf in Newcastle where they pick up seafaring men who are in search of a job, and suddenly found myself elevated to the rank of 'Purser', which fortunately included the possession of the Purser's cabin, the best on the boat, with plenty of room to move about in. As there were no duties attached to the office, I carried them out with perfect satisfaction

to the Captain, and had a most pleasant voyage, spending most of the time in the vain attempt to master a little of the Spanish tongue, the prevalent one in these parts.

We called nowhere, in fact saw neither sun or land, as it was, you may remember, rather a cold winter, until we went in to Cape St. Vincent to signal; and then on, slantwise across the Atlantic and past Fernando Noronha, a wonderfully picturesque little tropic island that you may have seen, till we saw the Brazil coast in the distance, and finally called in at Deseado, a god-forsaken out-of-the-way little settlement on the southern Argentine coast.

While the steamer was loading frozen mutton, which in England you probably buy and appreciate under the designation of 'Best Canterbury', there was a chance of working over an old kitchen midden of the Teuelche (or Tehuelche) Indians of what was once known as Patagonia, a name now discarded. During recent years the municipal authorities have selected the same site for the general township for refuse, which makes rather a mix-up of old and new. However, there were yet, though the 'middens' had already been often searched over by an enthusiast who lives here, a few things to be found, and they yielded three little arrow-heads, two scrapers, and lots of rough chipped flints. The same enthusiast kindly presented me with a few more arrow-heads. I did not like to take many when he showed me his things in an old cigar box, and regret deeply that my natural diffidence prevented me from taking more, as I easily could have done, because the stewards aboard took some afterwards. Mine (fig. 2) vary in size from 1 to 5, the latter being a specially good one of a size, so the people here say, that was used only by 'chiefs'. No. 6 puzzles me. I have about a dozen of these given to me at a port further south, Santa Cruz. They are all made of a very dark, almost black stone, and roughly chipped. It is quite evident that they are not simply unfinished ones, and as yet I cannot find out exactly what they are. They were given to me as unfinished arrow-heads that had been thrown away, but I doubt if this be true, and were found on the surface of the ground. However, I am only at the beginning of my work, and am just groping my way along.

There seem to be two types of throwing-stones (boleras, fig. 3). The first (1) is about double the size of the sketch, quite spherical, with a shallow groove round the equator. For their lassos with which to catch guanacos (I saw plenty of these on the pampas behind Santa Cruz)

they use three stones, each attached to a thong, the three thongs being tied together as in the sketch (fig. 4). They hold the one lowest in the sketch—which I think, but am not quite sure yet, is a smaller one—in the hand, and while galloping along, swing the other two round and

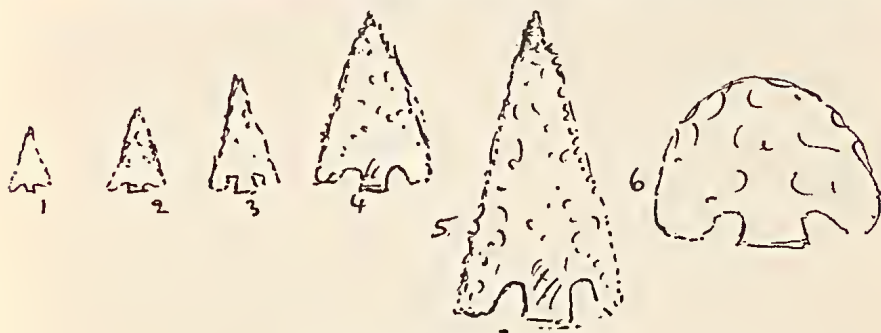


FIG. 2. Arrowheads.

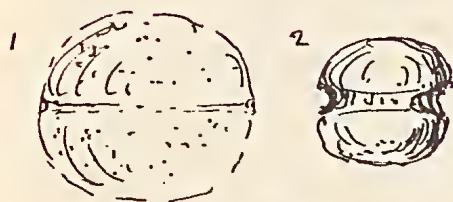


FIG. 3. Boleras.



FIG. 4. Lasso.

round, and let go at the guanaco. The whole twists round the beast's legs, and down it comes.

At Santa Cruz the owner of an estancia about forty miles inland to which we—that is, the Captain of the *Tudorstar*, Miss Hamilton, my secretary, who is very keen on the work and is going to study the native women, and myself—motored out, gave me first a very fine Teuelche skull¹ that he had dug out of a grave, secondly some of the blunt arrowheads, and thirdly a beautiful bolera with thong attached and all complete, used for catching what they call 'ostriches' here (*Rhea*), which also I saw on the Pampas. The stone (fig. 3, 2) has a much deeper groove than the larger ones, and is only about half the size of these: also, whilst the latter are only pecked over their surface, this one is ground down quite smooth. It is almost enclosed in leather (fig. 5). The

¹ Vide Preface, p. vii. The skull is marked 'San. Julian', but should be marked 'Santa Cruz' according to Miss Hamilton.

thong goes round the groove; at *a* and *b* it is excellently plaited, and has a handle of leather (horse hide like the thong) enclosing, I think, a short round piece of wood. I suppose you have got plenty of these things in the Pitt Rivers, but they were the first that I had seen in their home country, and I hope to get much more later on.

At St. Julian, I visited the Frigorifico, the one place of importance in all these little settlements, and had my introduction to the dietary system of S. Argentine, which is as follows. At 7 a.m. or thereabouts, or at any time convenient to yourself, you have a cup of coffee and roll. This lasts you till 12.30, when comes *almuerza* (*z* = *th*). Our menu at the Frigorifico was: Course (1) Cold ham and sheep



FIG. 5. Bolera with thong attached.

tongues, plenty of the latter of course near any Frigorifico; (2) hot roast beef supplied by the ship (as no cows thrive in this country) with potatoes in their skins (all vegetables imported, as there is no water for the gardens); (3) liver and bacon with potatoes and cabbage. I thought this quite enough meat for one meal, but to my horror it was followed by (4) hot pork chops and vegetables. Then came (5) pastry and puddings, and (6) bread and cheese and coffee. Mrs. Balfour may like to know what Argentines and Chileans expect, if ever any find their way to you at Oxford. When all was over, I furtively undid a button or two, when my hostess was not looking, and lay back and rested. After *almuerza* there is a break till 8 p.m., broken usually by a heavy afternoon tea, when *cena* or supper with much the same menu as at *almuerza* occurs.

At the present moment I am staying at a quite comfortable little hotel at Magallanes, and from my window look down the Magellan Straits with Tierra del Fuego on the east, and away to the south the snow-capped peaks of the southern part of the Andes. In a day or two I am off on a small steamer to a little settlement called Ushuaia on the very south of Tierra del Fuego, where I hear there are two or three surviving Indians. As winter is coming on, I may perhaps be marooned here for two or three months, but if there are any Indians, that will not matter. Write me a line to the Bank here; it will find me sooner or later. Kindest regards to Mrs. Balfour.

Yours sincerely,

W. Baldwin Spencer.

May 4, Saturday. Left Magallanes at 8.30 p.m. on forty-ton cutter 'Fortunato Viego', belonging to Messrs. Beban of Ushuaia, under Captain Emil Carsen. Dark when we left, and went down Broad and Famine Reaches during the night.

May 5, Sunday. Nine passengers on board, including Mr. Claude Williams of Estancia Rio Douglas on Navarin Island, son of the Rev. J. Williams, formerly missionary on Navarin. Early Sunday morning left Magellan Strait, which turned off eastwards at Cape Froward, and went south down Magellan Sound on west side of Dawson Island, with Clarence Island on west, and Tierra on east and south, to Cape Turn on Clarence Island. Anchored in Warp Bay at 3 p.m., as weather was rough in Channel. Mt. Sarmiento (7,830 ft.) to east of us; cloudy, but very good views occasionally, with glacier coming down from west side; glaciers all round Sarmiento Peninsula. To south of us, Pyramid Hill (2,500 ft.), and behind this, ranges all snow covered. Quiet night, and would have been most enjoyable but for certain passengers. Captain Carsen, Czecho-Slovak, a very quaint little man, always peering about with hands in pockets, and smoking cigarette of Chilean tobacco—odour unmistakable—with burnt end of paper hanging down; always during night walking through little cabin with four bunks round it, down little staircase to the engine room. Cook a most excellent shock-headed Spaniard, who at times came down for a furtive drink out of a dark cupboard just over my head; always had a glass of wine at meals. One day took chop from dish while we were at meal, sat down on ladder leading from deck to 'saloon', and ate it in his fingers; required more bread, and cut it on step of 'staircase'. Very excellent cook however. Sanitary arrangements, owing to two terrible female passengers, especially one, indescribable. Luckily, weather for the most part good, but girls horribly sick into pail held by cook, and used for sundry purposes.

May 6, Monday. Left Warp Bay at 6 a.m. Our route west and south-west along Cockburn Channel to north of Brecknock Peninsula, then out into open, and rough sea into Canal Ocasión¹ (Point Miguel). At south-east end of this point, a very narrow and sudden turn due east to Point Pyramid, this stretch of water reminding one of Scotch Highlands, but with snow mountains behind. Beech woods with autumn tints. East, and then round north end of Georgiana² Island, between Brecknock and Basket Islands, and so into Desolate Bay and Whaleboat Sound. Crossing the former, caught the swell from the open ocean to the south. Then along north of Stewart Island with Mt. Stewart (2,800 ft.), and on to Engano, a little cove on north of Londonderry Island, where we anchored for the night.

May 7, Tuesday. Started at 6 a.m. along channel between O'Brien Island on the north and Londonderry Island on the south. Saw what looked like a 'hanging valley' on Londonderry. Then east to the north of Timbales and Darwin and Chair Islands, and into North-West Channel (Plates V, VI) between mainland and Gordon Island. Scenery fine and interesting. To the north were the Darwin Ranges (4-6,000 ft.), from which a succession of great glaciers came down to the sea-level from enormous snow and ice fields. One glacier at least two miles broad at top, and must have been nearly half a mile wide where it entered the sea in a valley. Colour of glaciers very wonderful, whitish and azure, cerulean blue, often suffused with a delicate pink, and slashed through with great vertical cuts of deep rich ultramarine. The ice face, from top to bottom, absolutely pure and clean, without a vestige of the dirt that covers the terminal faces of most New Zealand glaciers. On the south side of the channel were ranges of high mountains and Romanche Bay. Romanche

¹ Western end of Brecknock Peninsula.

² To west of Basket Island.

PLATE V



Small glacier, Romanche Range: Beagle Channel, North-west Arm



Lapataia Bay, showing Darwin Range: Beagle Channel, near Ushuaia

W. H. R. S. 1111

Glacier (Plate V) is on north side of the Passage. At 6 p.m. entered Beagle Channel, where South-West and North-West Arms join, and anchored for the night a little way beyond on the north side.

May 8, Wednesday. Started at 4.30 a.m. on brilliant morning. All mountains to north covered with snow; great pyramidal mountain at Divide Point. On to east along Beagle Channel (Plate V) to Ushuaia Bay, where anchored at 10.30 a.m. Town very picturesque, in light snow with blue-grey, green-yellow, and red-roofed houses; church tower main note with three triumphant arches in honour of visit of training ship 'Sarmiento'. Air extraordinarily transparent, giving a very 'airy' effect with light coloured houses, church spire, gables, and snow on grass and streets. Peaks sharply outlined, especially serrated top of Olivia. Blue sky with fleecy clouds.

Landed with Mr. Williams, and took luggage through Customs; very courteous officer with wife who spoke English. To Police Station for passports, and to Mr. Kaiser, to whom Mr. W. Bridges had given letter of introduction. 'Judge' X—Y—very kind; formerly storekeeper (grocer) but failed at this, so took to Judgeship. Sometime ago Ken¹ was bringing stores, &c., round to Navarin, and called at Ushuaia. Met Judge Y—in street, told him he was taking stores to Navarin, and asked permission to land them in Ushuaia preliminary to reloading them. Judge gave permission at once and told Ken to put them in the store. Next day demanded 100 dollars and denied having given permission. Came down to 30 dollars Argentine. Ken declined, and Judge at last settled affair by saying that he would overlook matter if Ken gave him a lamb.

Next, to Mr. Martin Lawrence and Hotel Freire, 20 dollars Argentine a day. Entertaining landlord who came

¹ Tekenica Williams, elder brother of Claude Williams, v. p. 59.

and smoked cigarette lolling over back of chair while we ate our *almuerza*, and later on, *cena*. Excellent cooking; omelette and crab. Afternoon spent in shopping and making arrangements to get over to Navarin with Williams.

May 9, Thursday. Left Ushuaia in two-ton cutter 'Pepe A', Captain José Alvarez. Claude Williams and self out in search of coco-nut oil in morning. Went to Mr. Martin Lawrence and told him we had given up Remolina Point for the present, but would go there later on. Found captain very entertaining and pleasant. Jean¹ and self in kind of small 'hold' in front of mast. Tea and bread and butter. Fare from Ushuaia to Rio Douglas, 70 dollars Argentine, £5 17s. 6d.

Morning perfectly calm with all snow mountains remarkably visible, especially Martial Mountain and peaked summits of Mt. Olivia (4,765 ft.); could see far away down northern side of Beagle Channel. Out of little Bahia Ushuaia, to east of Bridge Islands, and across to Navarin. Could see entrance to Beagle Channel away to east, and kelp belts stretching for long distances.

At Santa Rosa anchored in little cove with jetty and residence of Senor E. Gomez, Sub-delegado marítimo Navarino. Went up to house flying Chilean flag, as Navarino belongs to Chile, and all entrants must call at Santa Rosa and pay fee to Sub-delegado. Stayed for an hour and had coffee. Guard of honour on leaving (inspection), three carabinieri and three nondescripts.

Out through narrow channel, still water, frozen over, and along north side of Navarin to Canal Murray. Lines of kelp, and on rocks large numbers of Kelp Goose in pairs; male pure white, female black when at rest and very difficult to see; white on wings when flying. Seals on way over. Going south, the Channel at Murray Narrows appeared to be closed in. Called at little cove on Dumas Peninsula, Hoste

¹ Jean is Miss Jean Hamilton.

PLATE VI



Beagle Channel, North-west Arm



Entrance to Rio Douglas, Isle Navarino, Chile

1875-1876

Island, to take some goods to a settler, a Sicilian¹ living here with a Yaghan wife and a little Yaghan boy. Sequestered little cove with beech forest right down to water's edge, golden and russet-brown and purple woods, with patches of green *llaña dura*, on which sheep can be fed during winter months. Small hut and outhouses.

Then on to Ponsonby Sound, with huge cliffs on east side of channel, and on across channel with Pasche Island to south. Entered Douglas River;² Estancia Rio Douglas on site of old Mission Station (Plate VIII) under the Rev. J. Williams. Arrived at Jetty in dark at 7.30 p.m., and found Norwegian barque there with crew at Estancia in search of furs. Met Ken Williams. Everything under light snow.

May 10, Friday. Quiet day at Rio Douglas. Norwegian barque left early in morning.

May 11, Saturday. Ken Williams went off in cutter in search of George and his wife, Yaghans who were camped on Hoste Island about fifteen miles further south down the sound. Spent afternoon searching on kitchen middens beside the Rio Douglas, and found large black somewhat coarsely chipped arrow, or spear head (?), lying among big cobble stones on river bank, and scrapers. Present-day Yaghans do not use these. Middens evidently very old, with enormous mass of shells, mainly mussels with limpets, barnacles, volutes, &c., seal and whale bones; of damp black earth, with beech trees, some quite twenty feet high, which have grown on top of these middens since they were made and used; all middens overgrown by grass.

Afterwards walked over hills behind station.

May 12, Sunday. Ken returned in morning towing George and his wife and four dogs and cats and belongings in flat-bottomed boat that natives now build. Had caught

¹ Spencer meant to write Chilean.—Letter from Miss Hamilton.

² Running into Douglas Bay.

seal on way as food for dogs. At the camp Ken Williams found that woman had died, and made coffin and buried her.

May 13, Monday. Began work with George, showing him 'Wanderings'.¹ Wild night.

May 14, Tuesday. Morning with George, who is evidently disinclined to discuss any important matters, so said nothing about these.

May 15, Wednesday. Began [Yaghan] relationships with George, &c.

Woman, *kippa*; man, *yāmēnna*; boy, *wūlēwa*; girl, *shukāni-kīpa*.

Colours: white, *yanina* or *yākū*; black, *lāmpi*; charcoal, *yāpūchi*; red, *lūch*.

Old big man, *hōlōyamēnna*; little boy, *yā-kā-wūlēwa*; little girl, *ya-ka-shukani-kīpa*.

Never pierce nasal septum. Fire made by striking two stones together, and allowing spark to fall into bird's down, which is then blown.

George's Yaghan name, *Ān-mā-tsing-man-this*; *Amasinansis* when spoken quickly. George's wife, *Shū-mau-naua-lākā-kīpa*. Native name of camp at Douglas River, *Asēllaiāku*.

Chilean Government ship 'Porvenir' arrived at 3 p.m. Wet day. Captain and chief officer and Senor Gomez came up to house. Ken Williams and Jean back to dinner on boat.

May 16, Thursday. 'Porvenir' left at 8 a.m. Ken and Enrique² in cutter to take stores to 'neighbour' fourteen miles south. Fine sunny day. Captain Alvarez left for Ushuaia at 1.30 p.m. Jean, self, and Claude Williams spent all afternoon on middens and got nothing. Ken back at 8 p.m. Frosty moonlight night.

George all morning on relationships.

¹ *Wanderings in Wild Australia*, Sir Baldwin Spencer, London, 1928.

² Servant of Mr. Williams.

Father, *ĩmun*; mother, *tāpĩ*;¹ all sons, *marku*; all daughters, *maikĩppa*;² eldest sister, *waikĩppa*;² eldest brother, *wai amu*; brother, *mamuks*; sisters, *mamuks kippa*; whole family (father, mother, children), *māma-kippa-o-mali*;³ youngest brother, *ashuwa*; youngest sister, *ashu-kippa*.

Fire, *bush-ait*; flame, *dākũtta*; wood for fire (pointing to wood), *aiyer*; to make a fire, *toma lak(u)*.

Husband or wife, *aua-tuk(u)*;⁴ married pair, *mātũk*; marriage, *tuk (tuku)*; father and mother both call sons *marku*; small boy, *yakka kaiula*; small girl, *yakka-shu-kani-kippa*; father's brother, *tau-wessa*; father's brother's wife, *tamai-kippa(?)*; father's brother's sons, *mamuks*; father's brother's daughters, *mamuks-kippa*; brother's sons, *yamenna*⁵ *marku*; brother's daughters, *yamanna*⁶ *maikippa*; husband's brother's wife, *mamaiaama tuk(u)*; mother's sister (man speaking), *yākkā tāpĩ*; wife's sister, *tukũ-tũ*; wife's sister's husband, *mai-āma-tuku*.

May 17, Friday. Quiet day, but clouds low with little sunshine. Hills under snow level deep blue-black and ultramarine; woods rich purple and warm russet brown and orange with deep green; reflections, with white lines of ripple on water. Claude and Enrique away after cows.

Morning with George on relationships; little progress. George very 'thick'.

Marry or married-state(?), *Tuk (tuku)*;⁷ married pair, *mātũk(?)*; wife or husband (reciprocal), *auatuk*; children altogether, *mamuks-kippa-mali*⁸ or *mama-quer-a-mali(?)*; sons

¹ In pencil above, *tāpĩ*; cf. entry for May 29.

² In margin, *male speaking*.

³ Pencil in margin, see May 17.

⁴ Pencil in margin, see May 17; pencil in B, scarcely sound *u*.

⁵ *a* written in ink over *e* of second syllable, then pencil parenthesis round *yamenna*, and *men* in pencil above *a*.

⁶ *e* in ink above *a* of second syllable.

⁷ For this and following terms, cf. May 16.

⁸ Cf. entries for May 21, 29.

altogether, *mama-quisa-omla*¹ (apparently no similar term for girls); brother's son, *yaměna marku*; father's brother, *tau wessa*; brother's daughter, *yaměna mai-kippa*; father's father, *ūshū*.

Afternoon at notes and Spanish. Jean got 'scraper' along bank of river.

May 18, Saturday. Fine calm day. Morning till 12, Spanish. 12.45 p.m., on little cutter with Ken and Jean some four or five miles up the Sound to little cove where landed. Beech Forest lined with bank of dead beech leaves; very rough travelling, roots seem to trail along the ground. Little bridge over the creek broken away.

Dug about four feet into old kitchen midden in search of two skeletons of men whom Ken knew were buried there. These two were drowned. Four Yaghans and two children were out in boat. Two men began fighting and boat capsized. These men were drowned, but woman, George's present wife *Shūmaui-naua-laka-kippa*, swam ashore with her youngest child. Bodies of two drowned men washed on shore later, and buried at this place in a kitchen midden. These bodies had been placed in a rough coffin, and evidently when recovered were decomposed, because coffin was only four feet long, and much too small to hold two adult bodies. Burial not in native Yaghan fashion; always buried lying on back with head towards west. To our disappointment, the skeletons had evidently been removed, and only traces were frontal bone of one skull, very soft and decayed, and two rib bones. Whole midden and grave very sodden with water. Shells of midden were as usual largely mussels, with a few volutes and patellas. A few seal bones. Only rounded stones, and no chipped ones of any kind. One peg on the surface of the ground indicated the position of the feet underneath.

Back to Rio Douglas at four. Sun setting. Snow

¹ Queried in margin of A. Cf. May 21, 29.

mountains on Hoste Island and away on the Beagle Channel. Row boat got loose from tow rope on way back and had to be rescued. Dry within. This little boat was one in which the Williamses spent fifteen days rounding the Horn Islands.

Gave George a day off. He is difficult to get anything out of, and keen on getting as much as he can for nothing.

May 19, Sunday. Quiet day. Gave George rations. Spanish. All afternoon searching along river bank, and got two old broken spear heads and a scraper. George showed me how Indians chopped tree down with bone 'wedge' (fig. 10, no. 1), sharpened by rubbing, and hit chiselwise with a stone till deep notch made in trunk.

May 20, Monday. Calm day. Colour and reflections. Mountain sides with grey rocks and line of beech trees bare of leaves, of colour like bloom on purple grapes; others russet brown and almost orange, or deep green, greenish-yellow, or brownish-red. Black soil. Forests of beech of two kinds.

Trees in open all bent over from the south-west. Sun setting across the Murray Channel, with snow mountains behind on Hoste Island, and further away along Beagle Channel; Douglas River running inland with reflections and old jetty.

Claude Williams dug out one side of kitchen midden. Six of these formed a kind of semi-circle with open side towards sea. Each one had depression in middle; longest being [perhaps 15]¹ feet in diameter and six feet high. Looked as if natives camped in the middle with fires all round them. One mass of shells and black earth with layers of calcined pinkish earth. Mussel shells predominated, but large numbers of Fissurellas and Patellas and Modiola-like shells and Volutes. Bird bones, apparently gannet, seal bones, and whale bones. Very few stones, and *no sign of any chipped ones*. Single bone harpoon.

¹ Miss Hamilton's memory. Mr. Williams writes to her that the average grave depression is 6 feet in diameter, and from 3 to 4 feet deep.

Jean and self along beach, but no sign of anything. All shore lined with cobbles and comminuted shells. Very little kelp thrown up.

George very angry with Torito (boy) who threw stone at his wife and stole rowlocks. He is called 'Rana' (frog), a term of reproach for bad mischievous boys. George's wife comes and sits down on damp ground. Has made a one-piece dress for herself.

Scraper, (1) *Au-wi*, (2) *Hai-yif*; fire, *bush-ait*; native celery, *hū-shūn*; George says only eat stalk when throat is bad, and then chew and expectorate it; eat roots, roasted in fire. They eat *au-ātcha*, nut of beech wood tree (big tree); Spanish name for this is *rubillo*; they also eat *Katern*,¹ a round yellow fungus growing on beeches higher up mountain.

¹ B, June 30, *katern* = deciduous beech, same name as 'fruit'. In B, under May 21, the fungus is referred to Darwin, *Voyage of the 'Beagle'*, ed. xii, 1894, p. 233, and to the *Linnaean Transactions*, vol. xix, p. 37, and a brief summary of Darwin's account is given.

There is one vegetable production deserving notice from its importance as an article of food to the Fuegians. It is a globular, bright-yellow fungus, which grows in vast numbers on the beech-trees. When young it is elastic and turgid, with a smooth surface; but when mature it shrinks, becomes tougher, and has its surface deeply pitted or honeycombed. . . . This fungus belongs to a new and curious genus;* I found a second species on another species of beech in Chile; and Dr. Hooker informs me, that just lately a third species has been discovered on a third species of beech in Van Diemen's Land. How singular is this relationship between parasitical fungi and the trees on which they grow, in distant parts of the world! In Tierra del Fuego the fungus in its tough and mature state is collected in large quantities by the women and children, and is eaten uncooked. It has a mucilaginous, slightly sweet taste, with a faint smell like that of a mushroom. With the exception of a few berries, chiefly of a dwarf arbutus, the natives eat no vegetable food beside this fungus. In New Zealand, before the introduction of the potato, the roots of the fern were largely consumed; at the present time, I believe Tierra de Fuego is the only country in the world where a cryptogamic plant affords a staple article of food.—Darwin, *Journal of Researches . . . during the Voyage of H.M.S. 'Beagle'*, cap. xi.

A specimen of *Nothofagus betuloides* Oerst. with the sort of growth mentioned on p. 103 arrived with the Spencer collection, and has been identified and described

* Described from my specimens, and notes by the Rev. J. M. Berkeley, in the *Linnaean Transactions* (vol. xix, p. 37) under the name of *Cyttaria Darwinii*: the Chilean species is *C. Berteroii*. The genus is allied to *Bulgaria*.—Darwin's note.

Mother's brother, *imăŋna*; mother's sister, *yākă-taiپی* ('other mother'); mother's sister's husband, *tamaka*; father's brother, *indaruwa* (in this part of Island, Douglas River), or *tau-essa* (on south side); daughters of the same, *kippa* (*mamuks kippa*); father's father's brother, *tanua*; father's father's sister, *koloana*; father's father's wife, *tūkūlū*; mother's mother, *koloana*, *kūlū-ăŋna* (*ăŋna*); mother's mother's sister, *koloana*; mother's sister's sons and daughters, *mamuks*, *mamuks kippa*.

May 21, Tuesday. Morning with George, relationship terms, &c. In afternoon went out to Point to photograph with Jean. Felt very ill on way back and had to lie down. Then to house and to bed. Apart from temporary discomfort felt physically well until suddenly this afternoon, when fortunately, after walk to 'point', had nearly reached the house. Seems like congestion of liver.¹ Have been ill since arrival May 9 with something like dysentery, but have been able to eat well. Passing nothing but colourless odourless slimy fluid all day and night at short intervals; always brought on immediately by taking food. Very uncomfortable. To-day, this seemed to be passing off; but sudden severe pain across chest; arms aching also severely, and head bad, but better when lying down.

Whole family, *măma quer-ă-măli*;² term applied to 3 or 4 or more boys in family, *măma-quīs-ă-orla*; if only two boys, simply call them *mamuks*; no special term for all girls; *mamuks kippai* *ă quăli* apparently applied to boys and girls of family altogether; son's son, *marku tissa(i)*;³ son's daughter, *marku-tissai*, *kippa(i)*;⁴ son's wife (man speaking), *măsăi-*

by Capt. J. Ramsbottom of the British Museum (Natural History). 'The *Nothofagus* is very warted, and although there is no clear indication of fungus fructifications on the surface, there are fungal hyphae within the tissues. I have no doubt that originally there were fruit-bodies of *Cyttaria* covering the excrescence. The fungus is apparently common on *Nothofagus* in the southern hemisphere and frequently stimulates the tree to form abnormal woody growths.'

¹ See pp. 106, 122, 123. ² See also May 17, 29. ³ See May 29. ⁴ *Sic*.

kippa; son's wife (woman speaking), *māsai-kippai*; daughter's husband, *māsáku*; wife's father, *māsáku*; wife's mother, *māsai-kippa*.

Chips of wood, *ūsh-tif* (*ūs-tif*).

small gnarled beech, *ñiti*.

fresh water, *sīma*.

salt water, *jīkā* (Spanish *j*).

grass, *schūka* (*shūka*).

soil, *tān* (sounds like *tañ*).

river, *waian*.

island, *yěshka*.

canoe, *ahnă(n)* (or *něn*).

oar or paddle, *āp-pi*.

seal, *ām-ma*.

fish, *āp-pūr*.

whale, *wā-pītha*.

whale bone, *tūsch*.

crab, *stäckālo*.

hot, *pūtū*.

cold, *tār(ū)*, *tār(ě)*.

I am cold, *hai-i taru*.

I am very hot, *hai-i putur-ō*.

me, *hai-i*.

you, *să*.

we (plural) are cold, *hai-an taru*.

we two are hot, *hai-i putu hīppa(i)*.

I work, *hai-i wush tauk*.

we two work, *hīppai wush tauk*.

we (three or more) work, *haian wush tauk*.

leaves, *phōpaia* (B).

trunk, *wai-ūsch* (B).

May 22, Wednesday. Bed. Claude Williams got bone awl and human bones in midden.

May 23, Thursday. Bed.

May 24, Friday. Bed. At sunset, canoe seen in distance entering Rio Douglas from the Murray Strait. Turned out to be the missing Domingo with his family, self, two wives, and five children, two otter dogs, and tame bird (a large kind of dark gull, a young one, called 'willy-willy' by natives). Of the two wives, the younger, who didn't look more than twenty-six to twenty-eight, was the daughter of the elder one, who was apparently discarded, but lived on in the family. The younger woman was the mother of the five children, and also of an elder boy who had come in with Alfredo Grandi¹ in a little two-ton cutter 'Porvenir' from Bertrand Island, a few miles further south in the straits which he owns. [This Grandi is a] tall broad-shouldered fine fellow, mother Spanish, father (Señor Grandi) Austro-Italian.

In the afternoon, late, came also a small two-ton cutter (only sail), the 'Venea', with Captain Ramon and companions—a Russian 'shooter' (Russian or Esthonian father, English mother), and a Portugese sailor. Little cutter had been out buffetting in open sea on way to Cape Horn, and was caught in gale. Rudder broken, mast gone,² but fortunately did not lose small boat. Driven away under the lee of Stewart Island, and then into comparatively quiet water. Managed to tow and beach the cutter in a cove near Cape Emily. Repaired rudder, got new beech-wood mast,³ and

¹ [His father's] boat wrecked near St. Rosa. Sailor and passenger (woman) took only boat and were saved. Captain [Alfredo's father] tied his boy to mast and swam off in effort to get help. Drowned, and boy frozen to death. Grandi [left this Alfredo and] another son. Mother still alive in Punta Arenas.—Note on left-hand page of A. See also entry for June 4.

² They had just three or four feet of mast left. Rigged up a little bit of sail, and as wind was favourable, they were carried to the island, and got into a little shelter, and so towed (rowing) boat to shore.—Note on left-hand page of A.

³ No suitable tree for mast, only gnarled beeches and others. Managed to rig up a temporary mast, and with favourable wind one day made more than 100 miles through to the east between O'Brien and Londonderry Islands, on into North-West

started off again. Now with 130 'Cape Horn Otter' skins (Sp. *Lutria*) is on way back to Magallanes. The shooter was a big bearded man who never missed a shot. They had one small dog belonging to the captain which was a marvel with the otters, hunting them out of their holes and caves among the rocks, and never letting go of them. He is now almost toothless, or teeth worn down, but still as keen as ever, and no price would part him from his owner. The crew of three must have had a wild, dreary and rough time, tossing about and sheltering at nights in any handy cove, but seem quite satisfied with their haul of 130 skins. These were all of the smaller but better variety, real 'Cape Horn *Lutria*', which is getting very rare. The skins in the rough have the coarser upper, and finer under fur. The men say that when 'prepared', the larger, coarser 'fur-hairs' come away with a lower layer of the skin in which their roots lie, the finer fur remaining with the upper layer. At least they say that they peel off a layer of skin, and the larger hairs with it, which remark can only be explained on the above theory.

May 25, Saturday. Bought 14 skins, 6 for Jean, 8 for self, from Captain Ramon for £2 each (363 dollars Argentine). Dressed Captain's hand. He had cut his thumb, then got hand very cold at sea, and after warming fingers at fire, too hot (frostbitten?). Had plunged fingers into cold water, and they swelled up, also 'palm' of thumb and wrist, [so that hand] curled over.

May 26, Sunday. Ken and Alfredo Grandi left in Ken's cutter, the 'Orompello', for Ushuaia at 9 a.m., towing the 'Venea' through the Murray Channel. The 'Venea' to go straight through to Magallanes. Ken and Grandi will turn off to St. Rosa, where they must call on their way to Ushuaia Arm, and so into Three Arms Bay on North of Gordon Island, where got suitable beech tree for mast. Then on, and turned south through Murray Channel into open South Atlantic, and spent three months round the Cape Horn Islands.—Note in margin of A.

to get permit from Gomez. Took Torito with them, and we were glad to get rid of him. Still day.

May 27, Monday. Still day. Afternoon to other side of river, Jean, Claude, dog, and self. Dug midden, but nothing. Photographed George and Domingo, three women and children and dogs (Plate VII). Clear sky and heavy frost in morning. Turned in before *cena*.

May 28, Tuesday. Colourless still cold day with cloudy sky and no frost. Writing most of day. Walk just before sunset. Everything very dark and dreary and forbidding, seemed to be hard and relentless and lacking in feeling of New Zealand Fiords even in stormy weather, but reds and russet-browns, and plum-coloured and deep green beech woods very fine, and keen silvery white of distant snow mountains was reflected in long drawn out lines in the dark water. Long thin line of white margining the base of the mountains across the Murray Channel.

May 29, Wednesday. *Mechai* is Spanish name for small tree, perhaps 12-15 feet high, with prickly leaves, closely resembling English holly. Two kinds of deciduous beech ('alto') on mountains, a larger and a smaller. Evergreen beech grows lower on mountains. *Leña dura* is name given to good firewood, but not beech.

Native names given to shells:¹ chiton, *yakaua*; patella,

¹ Through the kindness of Mr. G. C. Robson and Mr. J. R. le B. Tomlin of the British Museum (Natural History), the shells which Spencer collected have been identified as follows: *Plaxiphora setigera* (King), *Mytilus chorus* (Molina), *Mytilus magellanicus* (Dillwyn), *Chlamys patagonicus* (King), *Protothaca thaca* (Molina), *Protothaca fuegiensis* (Smith), *Protothaca antiqua* (King), *Marcia exalbida* (Dillwyn), *Patinigera aenea* (Martyn), *Patinigera aenea* var. *magellanica* (Gmelin), *Fissurella picta* (Gmelin), *Fissurella* ? *darwinii* (Reeve), *Crepidatella dilatata* (Lamarck), *Natica patagonica* (Philippi), *Voluta ancilla* (Solander), *Acanthina calcar* (Martyn) (imbricata Lamarck), *Concholepas peruviana* (Lamarck), *Trophon muriciformis* (King), *Trophon cretaceus* (Reeve), *Euthria antarctica* (Reeve), *Fusitriton magellanicus* (Dillwyn), *Photinula crawshayi* (Smith), *Margarella violacea* (King). With Yaghan skeleton (pp. 74, 85), three specimens of *Euthria plumbea* (Philippi) were sent.

ungwaia; fissurella, *ūngū*; a purplish coloured shell found on kelp and used for necklaces, *ūshpūka*;¹ another found on kelp (*B*), *narkaiwūn(a)*.

Windy day. Morning with George finding out names of, and applied by him to, Domingo's family, &c. Afternoon mending map.

One of Domingo's boys brought in a whale-bone harpoon used for spearing seals, and found on beach just to south of Douglas River. Characteristic of seal harpoons to have only one point. Fastened to shaft with tendon. A second tendon is tied on and attached to shaft half-way down, so that if harpoon becomes detached from shaft, it is still not lost (fig. 10, no. 5). Shaft about 9 feet long. Natives have slings for throwing stones.

Yaghan numbers: one, *kanalyi* (*alli* in Spanish); two, *kumpeipi*; three, *māta*; more than three, *wūlrū*.

Sun, *lūm*; moon, *hānūr*; smoke, *ushku*; no name for yellow (colour of) label that stood out brilliantly on bright red brilliantine bottle; colour of red, *lūsch*.

Domingo's family. George² calls Domingo *īmāna*, mother's brother (my *iman*); George calls old discarded wife *tamai kippa*, mother's brother's wife; and (2) young wife, daughter of number 1, *tamai kippa*. Domingo has two wives, an old woman and her daughter. There seems to be nothing abnormal in this. The young woman is the only one left

¹ *Ushpuka*, probably *Photinula violacea*. Cf. shells in Pitt Rivers Museum labelled 'ouchpouka'.

² From Miss Hamilton's diary: 'All morning the Professor worked with George in the old draughty shed, and seemed quite unaffected by the blinding smoke from the camp fire by which he sits for hours every morning on a piece of firewood, arranging and rearranging with meticulous care the small sticks and stones on the ground which he uses to represent to George the various tribal relationships and family groupings. Although he does not like the temperament of the latter, he shews the greatest patience with him, putting the sticks and stones away till to-morrow the moment he sees George's brain becoming tired. To-morrow carefully checking again all the collected information.'

PLATE VII



Domingo and family



Domingo's children



Frederico, son of Domingo

Yaghan Indians, Rio Douglas Camp, Isle Navarino

1850. 1851.

of the elder one's children.¹ Old woman calls her daughter *maikippa*; daughter calls old woman *tāipi*.

George calls the 3 sons of the young woman *mamuks quis a orla*;² calls 3 daughters of the young woman *mamuks kippai a mali*.

Children of young woman call old woman *kūlūānā* (*kōlō-anā*); and call George's wife *kūlūānā* (*kōlōanā*); and call George *mamuks*.

George's wife calls three boys and girls *markutissa*;³ young woman (wife) calls George *tāmāk* (or *tamaku*).

Names of Domingo's family, with places of birth after: Domingo, *Aia pūtilla schanaiensis* (Hoste Island).

Old woman,⁴ wife 1, *Yamu kauai a tippa* (Hoste Island).

Harry¹ (son), *Hārkuroaien* (Hoste Island).

Young woman,⁴ wife 2, *Kanuks* (Navarin).

Two elder girls of latter, *Kanuks* (Navarin).

One boy, *Aselliāku* (Douglas River).

One boy, *Uma-tātā-sunsis* (or *shis*). Other side of Hoste Island. Call this boy *Kwan*.

Youngest girl, *Aselliāku* (Douglas River). Born only two years ago in shed in which George and his wife and the Domingo family are now housed by the Jetties.

May 30, Thursday. Snow during night, and ground covered. Dull day with sun just above mountains. Spanish in morning. Afternoon spent in tracing chart, labelling bone implements, &c.

May 31, Friday. Wild night, rain in room. Snow melted. Strong south-west wind veering round more to west at intervals; sea black and foam-crested. Ken and Señor Grandi

¹ In A under May 24, it is said that Domingo's younger wife was mother of the five children, and also of an elder boy who had come in with Alfredo Grandi, who is there described as having a Spanish mother and an Austro-Italian father.

² See May 17, 21.

³ See May 21.—Note in A.

⁴ See May 31 regarding this marriage.

repairing machinery on cutter. Afternoon with George and words for parts of body.

Ken told us that Harry, eldest boy of Domingo, has special power of catching *shag* on rocks at night. He was one night with him and a Norwegian sailor. Harry landed and caught them easily, but when Norwegian came on rocks, all birds went away, whilst they had not moved so long as Harry was alone. Harry does not eat wing and breast of the birds. Ken told me this, and when later I questioned Harry, he confirmed it, not knowing that Ken had told me.

In the afternoon Ken gave me a long boomerang-shaped bone, evidently a piece of rib of whale shaped by thinning down and grinding each end. Had found it on Cape Horn Islands. George recognized it at once as a long bone implement called *Suf-sta* (fig. 8, no. 6) used by men for stripping bark off trees for canoes. It was pushed up by hand from below and behind the bark. *Hād-pūsh* is general name for bone. The implement is sometimes a foot longer than this one. At first glance, it is very suggestive of a boomerang, but it is never used for throwing.

Señor Grandi found a 'spear-head' on the surface of a midden on Bertrand Island.

Domingo calls both of his wives, old and young, *ūt-tūk*; George calls both the old and young wives *tamai-kippa*, or the two together, *mamai-tata-kippai*.

George told me this afternoon that when Domingo married the young wife, her mother was the wife of a man then alive. She had two or three other children who died. *When the mother's husband died, Domingo took her as his wife, but this was after he had married her daughter.*

Head as whole, *lakush kutta* or *Luma(na)*; *Luma* = also skull; bone generally = *hād-pūsh*.

hair of head, *ushta*.

- eye-brows, *ush-kash-a-tëlla* (or *kush a shtëlla*).
 moustache, *yash hun* (includes hair on upper lip and lower, and chin).
 mouth, *yā* (= lips and mouth).
 eye (as whole or ? eye-ball), *tāl-lă*.
 pupil, *au-yiff-tëlla*.
 cheek or face, *kāpi*.
 ear, *ūfti* (or *ūftif*).
 hair on cheek, *seisa*.
 chin, *wāni*.
 nose, *kashūsh*.
 nostril, *usten-nă*.
 neck, *huta*.
 back bone, *tăpălănua*.
 hip-bone, *ūsh-nū*.
 foot, *kō-ir* (no name for toes).
 tongue, *lūn*.
 heart, *serstīn* (or *sūrstin*).
 liver(?), *wai-ă*.
 brain, *ūsh-kut*.
 ribs, *ai-ūksch*.
 ribs and apparently general framework of thorax, *ka-ya-dëkka*.
 shoulders, *dau-ūka*.
 arm as a whole (no separate name for forearm), *kamei*.
 elbow, *tamila*.
 wrist, *marp*.
 hand altogether (no word for fingers), *yūsh*.
 finger nail, *kaluf*.
 leg, *pūlūp(u)*.
 navel, *kō-pū*.
 ankle, *kūsh-ū-ūn*.
 knee *un(a) wūll*.
 teeth, *tūn* or *tū-ūn*.

lung(?), *har shatair*.

intestines, *hūpa*.

Rain and snow, dark morning.

June 1, Saturday. Grandi and Harry left at 9.30 a.m. Dull day with south-west wind. Afternoon at midden with Claude. Jean and little Kwan along shore; got excellent skull of young Yaghan from mound. Evening cleaning bones.

June 2, Sunday. Paid George off, Tucker and 100 Chilean pesos. It was no good keeping him on, as he was difficult to get anything except straightforward things out of. Declined to talk on customs; said he did not know. Windy night, south-west wind. Most of snow cleared off the hills. Walk to middens beyond point in afternoon.

June 3, Monday. Dark morning, but cleared up during day, and freezing towards late afternoon. Quiet on water. Walk in afternoon. Many kelp geese. These come in to rivers during winter months, and in summer are away on the outer shores. Photographed children of Domingo. George not gone yet, and evidently not anxious to leave a 'soft job'. It looks much as if the only way to get anything out of the natives nowadays is by giving them drink.

Claude and Kwan (Yaghan boy) across river to middens; only got bone of skull cap, and old broken bone spear-head. Old woman, Domingo's elder wife, says that in olden times bodies were burned, which agrees with remnants of large fires met with in deeper parts of old middens, three and four and five feet down, where also are no shells, or very few, and only calcined light-coloured earth. Old woman says bodies not burned in more recent years.

From B (field book). Grandi's father some years ago detained for one year at Falklands because he had eighteen seal skins on board. Much later, only four or five years ago, little cutter out from Magallanes secured 800 skins, value £5 each, in 20 days, and got away clear, returning by way of

Chilean deep water, in which they had permit to catch deep-water seal.

Man has been granted lease of three islands off Falklands to try and introduce otter (*Nutria*), coypu,¹ and fox. Has taken latter two in. Cape Horn Otter, small ones, confined to Cape Horn Islands. Found on New and Lennox Islands, and False Cape Horn, and extends north on to south part of Hoste Island, Tekenika Bay, &c. Here they are mixed with large otter which alone is found elsewhere.

Two years ago 'Fortunato Viego' on way to Magallanes from Ushuaia met cloud of dust near Timbales Islands, North-West Arm, so thick that she could not see her way. Almost calm, but slight wind. Decks covered with white dust, but unfortunately brought no sample. This apropos of [lump² of] black vesicular (volcanic?) material about 5 inches long by 3 broad got by Ken Williams on Wollaston Island on shore of bay facing Cape Horn Island. Similar one got by him just outside Rio Douglas. (*End of B* for June 3.)

June 4, Tuesday. Clear night changed to clouds, no frost, and all snow off near hills. George and his wife left for Hoste Island at 9.30. Gave him 100 Chilean pesos, in addition to all food, for the three weeks during which he had been at Rio Douglas. His food was meat, plenty, flour, coffee, tea, rice, and sugar; had tobacco and cigarette papers also. He declined to pay Ken Williams 27 Argentine dollars due for some time, and his last request was for cartridges and bullets. He didn't get any. He is only anxious to secure drink. Mrs. George made dress for girl out of one of George's ancient shirts. Domingo and his family still here. George and his wife took Domingo's eldest girl away with them.

Further details from Ken as to Grandi's shipwreck.³ Two

¹ Native name of S.A. fur-bearing rodent mammal, *Myopotamus coypus*. Cf. Darwin, *Origin of Species*, ii. 349; *Journal of Voyage of the 'Beagle'*, xiii.

² Cf. perhaps Darwin's *Journal*, cap. xxi, ed. xii, p. 464, s.v. 'Volcanic bombs'.

³ Cf. entry for May 24.

passengers left boat which was close to St. Rosa on very wild dark snowy night. Said captain gave them permission. Captain, mate, two sailors, and boy (young Grandi) were left on board. People on shore afterwards said they could hear cries, but thought they were made by seals. Bodies of captain and mate found a little way up beach, where they had crawled and been frozen. Two sailors washed up on shore. The captain and crew had been drinking, and passengers said there was a quarrel between captain and mate as to exact position of St. Rosa.

(From B.) *Dutchick* (or *Dechic*), *kāshūn*,¹ flycatcher with white breast, lives on beech trees and nests there. *Dutchick* (or *Dechic*), *krū*, like *kashun*, nests in holes in banks. 'Thrush' = *zorzal* (Spanish). 'Blackbird' at Rio Douglas: both male and female dead black, including bill and legs; same size as English blackbird, and much more pointed and longer beak; eye black; not seen at any distance. Two flocks of parrots flying round rocks on Navarin. Too far off to see clearly, but sound very distinct. Apparently breed here.

'Jack-house',² special house in settlement amongst the others, larger than ordinary. Supporting poles painted red. (End of entry in B for June 4.)

June 5, *Wednesday*. Cold frosty bright morning with no wind. Early lunch; Ken, Enrique, Kwan, Jean, and self in cutter down Ponsonby Sound to a little rocky point a few miles west of Bertrand Island. Islands on way with a few sheep, and one with rabbits. Hoste Island away to west with Tekenika Bay, &c. Wonderful day. Very light east wind and water perfectly smooth.

Rocky hills covered with beech to water's edge, also *Severillo*,³ a holly-like plant with very prickly leaves (fig. 6).

¹ Cf. entry for June 6; elsewhere in B, 'little wren-like bird'.

² Cf. entry for July 1, s.v. 'Jack-house'.

³ Identified from specimen as *Berberis ilicifolia* Forst., by Capt. Ramsbottom of the British Museum (Natural History).



a billy-like plant. Leaves very bristly. Flowers in small

clusters. Rich deep yellow-orange in flower.

little sepals red-brown. flower quite glabrous.



Though now mid-winter many of the



trees in flower. I believe saw were about 20

feet in height.

Wood is yellow - was used by Gahyami

for making arrows (?). Another tree Canielo (spanish name) from

to height of 30-40 feet. When young looks much like a savanapan.

It is with roughly a cone shape & bright smooth green leaves. It

wood is useful for fuel etc as it is untouched by the borer (? Peredo)

(which attacks most wood - beech etc. (born into early calcareous tube).

It is Leña dura - hardwood - is evergreen - used as fuel in winter.

Saw a distinctly green tree in fruit on mountain sides.

FIG. 6. SEVERILLO AND OTHER TREES (facsimile half-page from large journal).

Flowers in small thickset little clusters. Flowers are rich deep yellow-orange in colour, and little sepals are red-brown. Flower is quite globular. Though now mid-winter, many of the trees are in flower. Tallest we saw were about 20 feet in height. Wood is yellow, and was used by Yaghans for making arrows (?).¹

Cănělo (Spanish name) grows to height of 30 to 40 feet. When young looks much like a sassafras, with, roughly, a cone shape, and bright smooth green leaves. Its wood is useful for piles, &c., as it is untouched by the borer (*teredo*?) which attacks most woods such as beech, &c. The borer has a curly calcareous tube.

Leña dura is a hard wood, evergreen. Used as fodder in winter. Seen as a distinctly green tree in forests on mountain side.

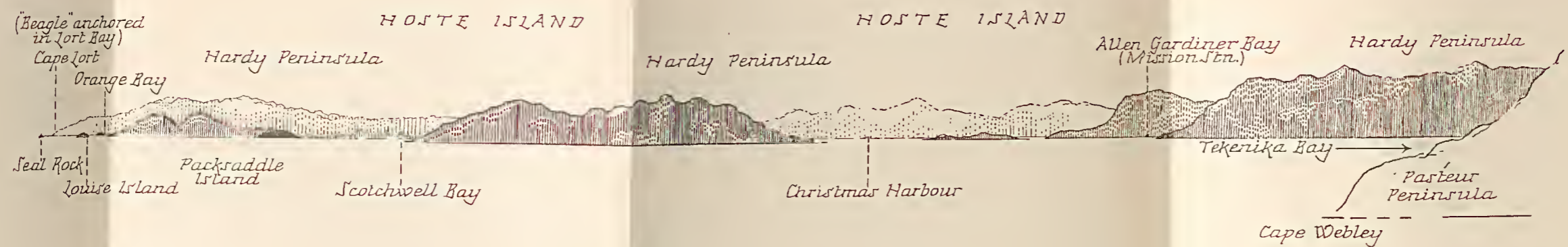
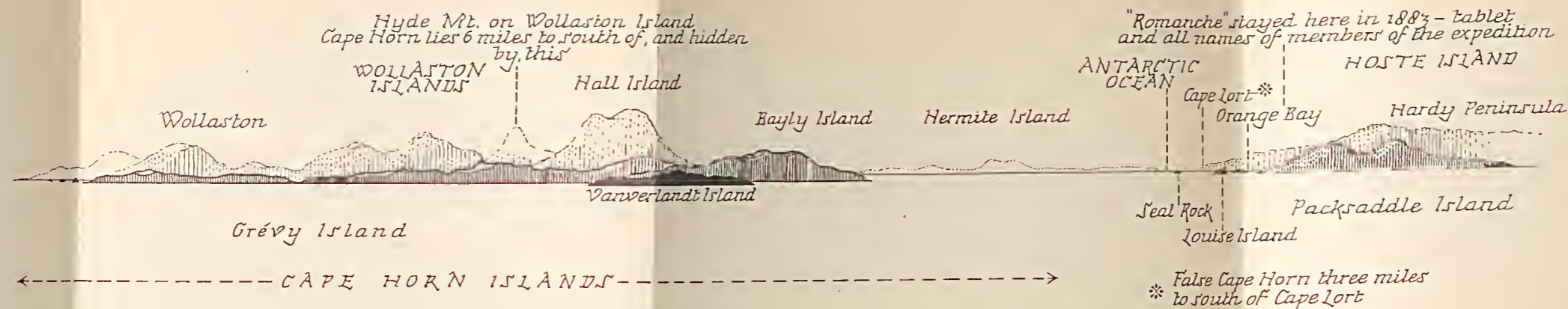
Rounded a point and turned into a small sheltered cove with shores steeply shelving, and trees down to water's edge. The rocks on the shore dipped under the water at the same angle as on land, but were not precipitous as in the case of the New Zealand Fiords. Could see them shelving down to a great depth until too deep to see further. Full of forests of huge kelp plant.

At one end of cove, stream coming down from hills. Cove called *Tū-opū* (Yaghan). Landed on sheltered side where was small cleared space with old kitchen middens with trees growing on them. Water too deep for anchor, so tied boat up to one of the huge kelp plants.² Belt of kelp all round, fringing the shores of the inlet and the shore-line outside. Kelp has wonderful effect on water which suddenly calms down so that there is comparatively calm water inside of it. Each plant of an enormous size. Roots matted together on

¹ Cf. entry for June 30, on bow and arrow.

² For an account of this kelp, cf. cap. xi of Darwin's *Journal of the Voyage of the 'Beagle'*; in ed. xii, 1894, pp. 236-7. See also entry for June 7.

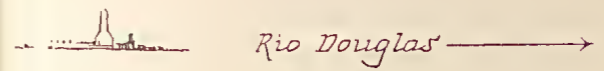
NAT. MUS. MELB.



VIEW FROM NAVARIN ISLAND
LOOKING ACROSS NASSAU BAY
SOUTH-EAST TO CAPE HORN
JUNE 1929

S.E. to
Cape Horn

VIEW FROM MÄN-SHÄN
ON NAVARIN ISLAND



rock, and plant has long stems that may be fully 100 feet long. Water perfectly smooth, and could see the huge kelp trees forming a great submarine forest rising from depths of 30 to 40 fathoms through the green water. Plants slant upwards to the surface, and never grow vertically. Each 'frond' comes off from the stalk, all along one side or mostly so, with ovoid swollen hollow structure, and frond two feet or more long. On this kelp live a number of animals, among others the pink-purple shell used by the natives for necklaces, like the *Elenchus* of the Tasmanians. Birds like the Kelp Goose feed on the fish that live amongst the kelp.

From the landing place climbed across the rocky tree-covered point called *Mǎn-shǎn*¹ (Yaghan) to a rock facing south-east across the water. The sea was wonderfully calm, opalescent with stretches of saffron-yellow and pale turquoise-blue with lines of darker blue. Here and there were hidden rocks with kelp patches. Across the waters of Ponsonby Sound was Hoste Island with its snow-capped peaks, and away to the north across the Murray Channel, Button Island, Pacha Islands, and others, were the snow peaks of the Beagle Channel and the Darwin Mountains. On to the south and south-east and south-west were the distant Wollaston and Hermite Island group with Cape Horn. Away to the south-west was False Cape Horn hidden by the range terminating in Cape Lort, three miles to the south of this. 'Beagle' anchored in Lort Bay. Could see Orange Bay in which 'Romanche' stayed a long time in 1883, and left tablet with all names on, Packsaddle Island, Scotchwell Bay, Hardy Peninsula with serrated range, Christmas Harbour, and Tekenika Bay with Allan Gardiner Bay. Then looked northwards to Cape Webley, and almost due west of where we sat to Pasteur Peninsula (see map).

¹ Note in margin of A: Only landing places in cove were the little beach on which we landed, and a small patch of shingle on opposite side. No trace of hanging valley here or anywhere along the coast.

Track across point amongst beeches very sodden. Trees knocked down by hurricane and rotting. Marchantia in abundance, and on rocky point patches of large moss in fruit, closely similar to small specimens of Dawsonia on the Black Spur, Victoria. Little fern with leaves flat on ground everywhere.

Kelp Goose or Rock Goose (*Anas antarctica*)¹ extends over Falkland Islands, Chile, Tierra del Fuego, &c. In winter comes into river mouths, such as Rio Douglas, to feed, but in summer is out in open parts. Loggerhead Duck or Paddle or Steamer Duck (*Anas brachyptera*),¹ really a goose, may weigh up to 29 pounds; has small wings that are used alternately as paddles. Ken told me that once a paddle duck kept flying or paddling ahead of his cutter, going 8 miles an hour, for 4 miles, then dived.

Yaghan showed us special belt of kelp which natives are too frightened to cross because a great monster like a huge worm, called *Wongara*, drags them and their boats under water. *Wongara* is a general word for worm.

Very curious effect at sunset. The sky was just the same as in Central Australia and the Tropics, though not quite so brilliant as in the latter. To the south, steel-blue along horizon shading into peach pink above and then into cold blue of sky. Distant Hermite Island, &c., simply silhouetted in warm and then cold colour against the sky. Sea opalescent with shades of turquoise and saffron and green. To north the sky yellow and orange. In the west, the snow ranges tinted with the setting sun, setting very much north of west. To north, ranges standing out curiously against the sky. After sunset all snow mountains standing out strongly. The air was cold, freezing, and there was extraordinary mixture of tropical effect in sky and cold in air.

On way back passed under precipice where great flocks

¹ Cf. Darwin, *Voyage of the 'Beagle'*, cap. ix, s.v. For Steamer Duck, cf. pp. 92, 143.

of shags were perching for night on little rock ledge with apparently only the meagrest foot-hold. A shot sent them all circling high up in air. Rio Douglas at dark.

Tidal current enters Beagle Channel from the West, and runs strongly Eastwards as far as Gable Island¹ where it meets, apparently, the incoming tidal current from the East. Passage between Gable Island and 'mainland' narrow, and strong current. From Beagle Channel current runs South down Murray Narrows. From the Antarctic, the tidal current sets in North between False Cape Horn and Hermite Island to Nassau Bay, into which current also enters from the East. These currents run Westwards and Northwards into Tekenika Bay and Ponsonby Sound where, to the South of Button Island, they meet the current coming down the Murray Narrows. This current, and one from Nassau Bay, are deflected Westwards into Agaia Channel² where, between Grande Island² and 'mainland' the current is so strong that one cannot row against it.

June 6, Thursday. In afternoon along banks of river and across the old pile bridge, which was falling to pieces. Pair of large Kingfishers³ perching on bridge. The bird builds its nests in holes in the river bank. Has a very feeble kind of gurgle. In size, it is about equal to a 'laughing jackass', but more delicately built. Not a trace of blue in its plumage.

Dūsh-ūsh or *Pūsh-ūsh*.⁴ Yaghan name of small bird about

¹ North of Navarin Island.

² Ponsonby Sound, and island in it.

³ Mr. B. W. Tucker has kindly identified this bird as *Streptoceryle torquata*, following Spencer's sketch with his notes on the colour of the plumage.

⁴ From a similar sketch with notes, Mr. Tucker has identified this bird as *Phrygilus gayi* (Eyedoux and Gervais).*

* From Miss Hamilton's diary: The Professor was up very early, eagerly awaiting the arrival of his pet colony of Dush-ush birds. The blackbirds do not arrive until the afternoon. The scattering of the breadcrumbs along the kitchen window ledge, water barrels, and under the willow trees, is quite a sacred ritual. The birds have

size of bullfinch, dull yellow-green (brightest on breast, darkest on back) on head, back, breast, and tail. Blue-grey on back of neck, shoulders, and rump. A colony of about fifteen in willow trees close to house, along with a dozen blackbirds and a few white-breasted smaller birds. Constant hard little chirp like hitting a short sharp knock on a stone.

Dutschick (or *Dëchic*) *kāshūn*: Yaghan name for small white-breasted bird with gold line along each side of head. Very common everywhere in the forest. Smaller than *Pūsh-ūsh* (*Dūsh-ūsh*).

Ken told me story of boiling lake high up on Hoste Island behind the tall snow peak on Dumas Peninsula seen from Rio Douglas. Too hot to hold hand in and very dangerous to go near. Also there is a special cove on Tekenika Bay with a cave in which lives a dangerous spirit. No Yaghan dare stay there at night. George told Ken, who had done so, that he was lucky to have got out alive. Strange noises are always to be heard there at night time. Those heard by Ken were made by wind amongst the rocks.

June 7, Friday (from B). Darwin, on authority of Jemmy Button, says that foxes and guanacos, which occur on Navarin, are not found on Hoste Island [though the channel separating them is only about half a mile wide]. *Voyage of the 'Beagle'*, ed. xii, p. 234 [cap. xi]. Foxes, red-haired, are abundant on Hoste Island, but not guanacos.

become . . . tame, and will fly into the kitchen when he is there alone. The small Indian boy (Juan), whose favourite sport was killing these beautiful birds with a stone and sling, now tiptoes past the willow trees. His killing instincts are now vented instead on the cats. For this action he is usually rewarded with sweets and a smile of approval, and although the subtle distinction rather mystifies Juan, he very much appreciates the sweets, and seeing more and more birds appearing every day to be fed.

July 15th. Ample proof of their tameness was seen later on returning to Rio Douglas, Isle Navarin, for our belongings. As a surprise for the Professor, Claud Williams had continued feeding the birds, and had six blackbirds contentedly housed awaiting the arrival of the Professor.

PLATE VIII



Isle Navarino



Rio Douglas, Isle Navarino, looking across the water to Ponsonby Sound

NAT. MUS. MELB.

Kelp, *Macrocystis pyrifera*: see *Journal, Voyage of the 'Beagle'*, ed. xii, p. 236 [cap. xi].

(*From A*). White frosty morning and fine bright day. 'Evening' star extraordinarily bright every morning. Dead calm night. Slight north wind later.

Three woodpeckers: black, bodies, tail, and wings, when at rest, with white line down back. Female, black crest, and all over. Two males had brilliant scarlet head and crest which is erected when pecking viciously at dead trees. Can be heard some distance away. They cling upright to trunk when pecking, and have very long tongue with sharp point.

Reading *Beagle*. Darwin, ed. xii [footnote on p. 232, cap. xi], says on authority of Fitz Roy that trees that grow near the base of the mountains change their colour, but not those on the higher parts. So far as we can see here and elsewhere, this is a mistake. The evergreen beeches cover the lower parts of the hills, as also other evergreen trees, like the *Severillo* or *Canelo*. The smaller deciduous beeches cover the higher parts of the mountains, and at the present time (June 1929) are all bare of leaves and of a lovely purplish colour, like the delicate bloom on purple plums. Leaves change in early April to yellow, then red, then brown, and fall off, when the woods assume their winter colour. Beech trees on the lower slopes remain (June 1929) deep rich green in colour, as also the *Severillo* and *Canelo* and 'Leña dura'.

Afternoon walk across old bridge. Panoramic photos. (Plates VI, VIII.)

Claude came in with supply of special large edible mussel that only grows in certain parts. One bed near the southern entrance to the Murray Channel. Also large volute and *Echinus* much like *Strongylocentrotus* of Victoria. All of these are caught with a four-pronged spear, the prongs being kept apart by two pieces of wood at right angles to one another. Domingo has one. The whole is only 2 ft. 6 in. long, but

may have handle several feet in length. The mussel is a very large one, with usually a very strongly marked 'lip' to the shell, both valves, and grows only in fairly deep water always below low tide, about 10 to 12 feet, or even deeper. When boiled the tuft of hard chitinous threads easily pulls out and the whole of the rest is edible, though the adductor is somewhat inclined to be tough. Still it is, when boiled, not very tough, and readily breaks up into threads. The whole of the mantle is very soft and swollen with ova. The whole of the foot is very soft, and seems composed of what are probably glands connected with alimentary canal. It has no muscle fibres detectable. In colour when boiled, with the mantles in position, it looks like a great giant broad bean, pearl-grey and slightly lavender and pink, with the muscle a creamy colour. In flavour it is much like a delicate crayfish. The natives were very fond of it, judging by the numbers in their kitchen middens, but it is only met with in certain parts.¹

Large sea-urchin, resembling *Strongylocentrotus*, is called *a-kiss*. The ligament is always bright red with a fluid which rubs off on the hand. The Yaghans sometimes use it to draw lines of red on the face. Easily stains the skin when fresh. The case of the sea-urchin is broken open, the alimentary canal and sand washed out, and the five double rows of eggs eaten raw. Also eaten raw by 'whites'. (B) *Erizo* in Spanish.

June 8, Saturday. Clear frosty night. Ken and Enrique left at 10.15 in cutter for Hoste Island to bring back two men who had been left there in search of skins. When taking them, they had to haul a rowing boat for three miles over a 'camino', and over ice and snow. Had talk with Ken about mountain lakes of which there are several on Navarin. Evening reading Darwin (*Beagle*).

¹ *Läppa* is the Yaghan name. Life size drawing 'taken from its shell' in text. From number on specimen, it would appear to be *Mytilus magellanicus* (Dillwyn). The Yaghans call the barnacle growing on it *Leppa*.

June 9, Sunday. Ken and Enrique still away. Clear freezing night. Harry and another Yaghan boy walked over from Bertrand Island, eight miles, and arrived 12.30 p.m. Stayed all day and had two good meals.

Spent morning cleaning and packing bones of skeleton (immature) from midden, found by Claude. Most of bones were obtained, but all epiphyses were loose. Body lying on its right side, with head to west, and legs bent at knees. Had been slightly disturbed. Very cold work collecting bones in midden. Presence of four bone buttons, two near the knees and two higher up, showed that body was presumably interred subsequent to advent of white men (Mission most likely) on Navarin, unless the buttons had been obtained from some ship-wreck.

Early afternoon getting Yaghan names for shells¹ from 'Harry' (Yaghan).

Walk in late afternoon. Sun in afternoon. Woodpeckers seen, two males with brilliant scarlet heads and crests and white line down back, due to white on wings when closed. This white is very evident when they are flying. Female all black, including crest.

June 10, Monday. Ken and Enrique came in about 7 a.m. Dark. They had run aground at the entrance to Rio Douglas in the dark about 7.30 p.m. on Sunday evening. Mistook entrance, and came in to south of big boulder. Fortunately ran on to a little sand neck stretching up between the

¹ Comparing numbered drawings and specimens with B.M. list: *Kälüfa*, *Mytilus chorus* (Molina); *Yäk-kör* or *Yäk-kauwa*, *Plaxiphora setigera* (King); *Porsch* or *Porsh*, *Voluta ancilla* Solander; *Tän-ü-wä*, *Fusitriton magellanicus* (Dillwyn), with prefix *yü-ä* (big), and same name with prefix *yäkka* (small) for *Trophon cretaceus* (Reeve); *Shäp-i*, *Chlamys patagonicus* (King); *Yäma-läk-üa*, *Concholepas peruviana* (Lamarck). The last-named is labelled 'Cape Horn', and the drawing 'From Cape Horn Islands; many found on Hermite Islands'. A 'Razor Shell', of which there is no specimen, is labelled *Tash-ö-i* or *Tash*. Spencer notes that his informant is quite positive that both shells are called *Tän-ü-wä*, though they are quite distinct from each other.

boulders, and so little harm done. Bay studded with many uncharted islands. When tide low, walked off. Will not get boat off till high tide, 5 p.m., this evening.

Men had no luck in skins. Had gone to special place on South of Hoste Island, very little known. But one man on board Norwegian cutter that left Rio Douglas May 10th knew of it, so that Williams's men were forestalled. Only got four small otter and one good fox (red, probably *Canis magellanicus*) skin that reached from my eyes to the ground. Fox caught night Ken arrived. Fox carried trap away up hills into woods, and was followed and found by dogs. Bought skin for 30 dollars Argentine, £2 10s.

Afternoon along beach. Writing. Flaming sunset. Cloudy sky in afternoon with sun at intervals. Ken's cutter brought four seals, 'sea-cows' for dog's food, and also for Domingo and family. Ken left one man at place on Hoste Island where George lives. Latter stated his intention of returning soon to Rio Douglas because he thought I should probably want him. Claude cut Kwan's (Juan) hair. His close-clipped skull looks much like that of skull of immature man(?) from midden. Nose looks very low and flat and face has lost its interest to wonderful extent.

June 11, Thursday. Cloudy night, no frost, north-west wind. Rough in Sound. Morning and afternoon copying and mending chart of Beagle Channel, Gordon and Londonderry Islands, &c. Afternoon walk and search for implements by river. Karancha bird (Darwin, *Journal*, p. 73)¹ on tree. Looks size of large kestrel; flat head, dark head-cap, reddish under wings and on 'cheeks'. General dark greenish-brown body with brownish patch under head (throat), and light 'spikey' feathers on chest. When flying, tail is spread out fan-wise. Long tail feathers all white with dark terminal band. Wing feathers white, but hidden by dark upper

¹ *Voyage of the 'Beagle'*, ed. xii, pp. 71-4, cap. iii.

feathers when at rest. Karancha feeds on carrion on shore, but will attack young lambs, pecking eyes out.

Kwan appeared in new trousers and white shirt, and had a bath, which made him more pleasant to be near to.

When crossing one of the Sounds, like Ponsonby, or even a narrower channel like the Murray Narrows, a man will paint broad transverse bands of black across the woman's face. This supposed to ensure a fairweather crossing. Fine smooth calm day chosen for crossing whenever possible.

June 12, Wednesday. Mild day. Evening rain. Dark clouds all day over Hoste Island and across Ponsonby Sound. Looked like a great black void, nothing to be seen but dense purple-black, shading above, and lying under the grey and white cloud masses. Repairing chart [for Grandi]¹ and 'fleshing' fox head in morning (*Canis magellanicus*, the skull of the fur specimen). Ken and David Asencio—fur hunter, once in police at Gallegos (*B*)—repairing boat; 15 gallons of water in her during the night after bringing her up the river. Spanish in evening. Fresh water run out; has to be brought from other side of river.

June 13, Thursday. Mild night. Ground all thawed and tussocks of grass soft. Morning, Spanish and walking. Afternoon walking through lower beech forest on foothills, and then round to point and midden. Very dull and overcast and threatening across the Sound. Bone awl on midden.

*Chimango*² birds like smaller *Karancha*, but white of wings and of tail of latter is replaced by light buff colour. Eight of them in scrub, evidently attracted by seals left in open for dogs to deal with.

Two bullocks killed for Ushuaia. On way back in afternoon from the middens saw Grandi's cutter away down the Sound coming from Bertrand Island, bringing sheep from

¹ Miss Hamilton's diary.

² Cf. Darwin, *Journal of the 'Beagle'*, ed. xii, pp. 72-4, cap. iii.

Ushuaia. Grandi brought large model of Yaghan canoe, bark, seven feet long, very fine one; history unknown, but belonged to Grandi's father, and has been on Bertrand Island many years.

On the hills behind the station and bordering the Rio Douglas valley, the damp ground for long stretches amongst the beech trees, for at least a quarter of an acre in one place, was covered with a thick growth of liverwort, *Marchantia*, 'fruiting' freely. Patches brown with dead fertile upgrowths. In parts, also patches of large moss, *Dawsonia*(?), fruiting. All over the lower hills and flats moss very abundant and giving appearance of going to form peat under drier condition. Rushes, *Juncus*-like, covering large patches; these used by natives for making baskets. Great growth of small ferns everywhere, for the most part leaves lying flat, or mainly so, on the ground; when around base of little shrubs like 'Kalifate', they grow upwards.

Grandi brought smooth, ground, long piece of whalebone, evidently a 'harpoon' in the making.

Domingo's present canoe is a dug-out. Piece of tin, used to be bark, in middle of canoe for fire. When burning, the fire is surrounded by a circle of shingle or sand for safety. Bark canoe precedes dug-out, which has now and for some years past entirely replaced bark, though Yaghans still make models of these for sale. When making a dug-out, a large beech tree is chosen. It is cut out with axe, so that gun-wales bend over. Then sand is spread over bottom, and all inside smeared over with seal-oil, and fires are lighted all along. Heat softens the wood, and stays are fixed across to open up the top.

Domingo's wife, very bleary-eyed, is regarded as a great witch or sorceress. It seems certain that she has been responsible for putting some of the aged people to death by throttling. At all events, she has the credit of having done

this, and looks equal to it. Has a queer habit of pursing her lips so that the upper is drawn in at each end so as to project in the middle like a beak over the lower one, which is drawn under. Can also curl lower lip down and put tongue out (George's wife does this also) rather like, but on a much smaller scale than the Maori. Eyes raw and red like raw beef; hair dark and lank.

Young Kwan shows little sign of supra-orbital ridge, or notch above nose, which is very flat.

George had another wife before his present one. One of her sons is by another man. She is mother of 'boy' (looks about 17 or 18) employed at Grandi's estancia on Bertrand Island. This wife was stolen from George.

(From B.) Domingo and George after dispute following on drinking: *Domingo to George*, 'That one' (pointing to George's present wife) 'once my wife, my wife before. That one' (pointing to his elder wife)¹ 'my wife. This one' (pointing to his younger wife) 'my wife. These children' (five of them) 'all mine. Me governor here.' George subsides.

June 14, Friday. Up early at 5.30, but Grandi did not go till 9.30. Claude got two parrots and a loggerhead duck. Clear bright day. Took loose hoops out of my Yaghan canoe, and put it in well to soak, so as to mend breaks.

Afternoon skinning parrot and walking. Back and shoulders dull 'sage'-green. Long wing feathers with black quills. (Tail feathers rich dull reddish 'cinnamon' with black quills.) Cheek and behind eyes, and breast a lighter yellower green. Under surface dull indian red: Behind vent and under tail feathers dull yellow green. Eye orange red. Total length 14 inches. Tail $7\frac{1}{2}$ inches.

Old graveyard of Mission Station close by the site of the old church. Had been originally consecrated by Bishop Emery. After abandonment of Mission by Rev. Williams,

¹ Cf. entry for May 29.

station was taken over by Menendez, who spent £15,000¹ on it, fencing, &c. Old bridge still remaining and serviceable, though roadway of logs much in need of repair and side rails broken down in one or two parts. Very substantially built. Water close up to planking at usual high tide, and water over it at times. After, Menendez left an Italian in charge for some time. He fenced in part of the old graveyard, some 36 graves. Ken says there were about 70 in all, between 1906 and 1917, when the Mission was given up. Round two of graves, a little picket fence, but all others destroyed, though pickets still lying around. Body once dug up, but it was all decomposed, due to rotting by water which soaks down from the hill behind the station. Site ought to be retained as relic of old Yaghan tribe now nearly extinct. Ken says that 70 or thereabouts still remain, most at Mussel Point, where there is a Reserve. Two or three families like Domingo's live away from the rest, preferring their old nomad independent life. They live by fishing, seal, &c., and selling some few otter skins.

June 15, Saturday. Rain during night, and snow during day. Three woodpeckers close to house. Skinning loggerhead duck; very greasy. Wings very small and of no use for flight, but strong, and act as paddles. Evening writing.

June 16, Sunday. Gusty night at intervals, and snow; very dark morning, especially across the Sound to Hoste Island, which for the greater part of the time was shrouded in deep purple-black darkness. On the hill near the house small group of beech trees, very picturesque. Snow from north-west had whitened trunks that stood out against dull grey clouds shading down into yellowish just above the white hills. Foliage all russet-brown, and very delicate and Japanese in form. Trunks as white as those of Whitewash Gums of Central Australia.

¹ £15,000: Miss Hamilton's diary.

Most of day dissecting Loggerhead Duck.¹ Evening, Spanish.

June 17, Monday. Blustery night, and snow nearly melted. Wind north-west. No sun all day; very bleak and dreary and 'black and white'. Loggerhead duck till 2 p.m. Walk to middens on point. Large number of Kelp Geese ranged round the shore lines. White ganders very conspicuous; dark females always there, but mostly invisible in distance. Some six or eight Kimango birds put in their appearance, due to bodies of seals lying about for dog's food. Evening writing.

June 18, Tuesday. Mild day, and snow mostly gone. Tussocks of moss and turf unfrozen, and getting soft. Found 'moth' in otter tails belonging to Ken. Ken stretching skins of 'hair-seal' on frames. Skin then carefully scraped. All day dissecting wing of loggerhead duck till 5 p.m. Eighteen Chimango birds in paddock close to house, attracted by body of loggerhead thrown out. Fine bright warm afternoon. Bright sunlight, but sun now rises only little way over hill on opposite side of Rio Douglas. Most of snow has melted. Clouded over in late afternoon, and light rain during evening. Are anxious for more because all tubs are empty, and water has had to be brought from little stream across the river. Wind north-west.

June 19, Wednesday. *Dūsh-ūsh* getting very tame; come close up for crumbs. Always first to appear; blackbirds come much later in the day. The little 'white breast' has not been here for more than a week. Heavy snow again.

¹ From Miss Hamilton's diary: For the last three days the Professor has been dissecting the logger-head duck in order to understand the functioning of the small wings by which it paddles so rapidly. He . . . has completely lost for the moment his usually sensitive nose, as the odour from this bird is simply dreadful . . . he leans over it working with the roughest of implements, [and] appears entirely unconscious of . . . the intense cold and bad light due to the heavy snowstorms which we have had throughout the day. He only consented to be dragged away when it was too dark for further work.

PLATE IX.

DIAGRAMS OF THE MUSCULATURE OF THE WING OF THE LOGGERHEAD OR STEAMER DUCK—*Tachyeres* *cinereus* (Gm.).

- A. Diagram of the superficial musculature of the inner aspect of the right wing.
B. Diagram of the inner aspect of the right elbow-joint with the superficial muscles and the brachialis anticus removed.

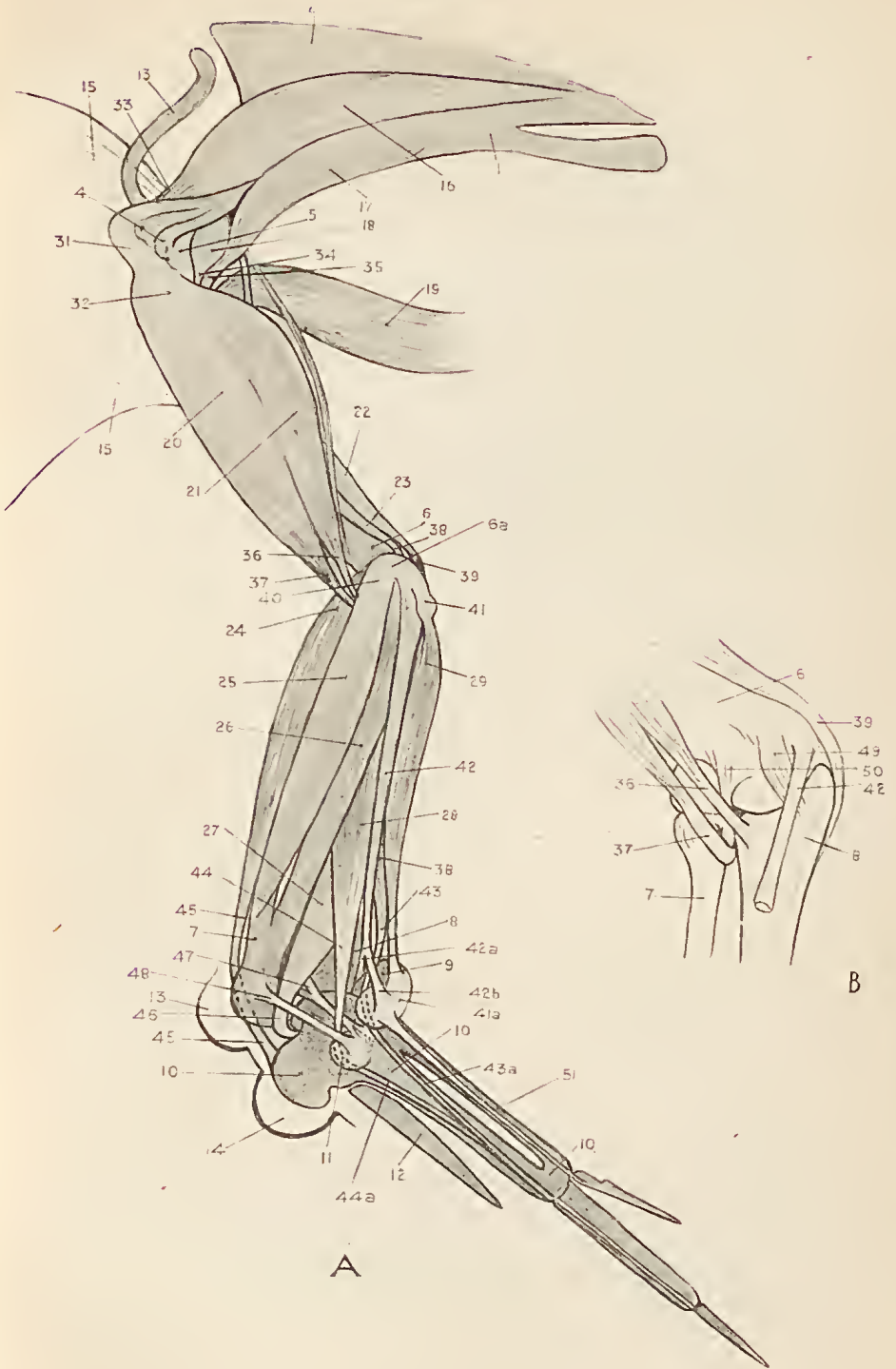
In the subjoined key the wording of the original rough key to the diagrams is preserved, and the proper names of the muscles are added in brackets, these and any other additions being printed in *italics*. The terminology used is that of Shufeldt, *Myology of the Raven* (1890), in which a full synonymy, reproduced from Gadow (Bronn's *Thier-Reichs*, vi. Bd., iv. Abth., 1888) will be found.

For further description see p. 143.

1. Sternum. 2. Carina of sternum. 3. Clavicle. 4. Head of coracoid. 5. Head of humerus, ensheathed in tendon. 6. Lower end of humerus. 6a. Head (*sic*, i.e. *distal end*) of humerus, ensheathed in tendon. 7. Lower end of radius. 8. Lower end of ulna. 9. Carpus.
10. Carpo-metacarpus. 11. Knob on carpo-metacarpus, round which runs tendon of 44. 12. Digit of bastard wing. 13. Knob on lower end of radius. 14. Knob on end of carpo-metacarpus. 15. Pectoralis major reflected. 16. Pectoralis minor. 17. Smaller pectoral muscle with tendon inserted on humerus (*pectoralis tertius*). 18. Muscle from below coracoid with tendon inserted on head of humerus under large tendon (*of biceps*) ensheathing head (*coraco-brachialis*). 19. Muscle from dorsal surface to head of humerus (*teres et infraspinatus*).
20. Muscle (*biceps: portion inserted on radius*). 21. Muscle (*biceps: portion inserted on ulna*). 22. Muscle, with tendon running over ant. (upper) knob of humeral condyle to ulna (*scapular part of the triceps*). 23. Deeper muscle attached to length of surface of humerus; tendon to ulna between knobs of humeral condyle (*humeral part of the triceps*). 24. Muscle with head on lower part of humerus (*extensor metacarpi radialis longior*). 25. Muscle with tendon over head of humerus (*pronator brevis*). 26. Deep muscle: upper end on head of humerus, along greater part of its length to radius (*pronator longus*). 27. Muscle (*flexor carpi ulnaris brevior*). 28. Muscle attached to ulna (*flexor digitorum profundus*). 29. Muscle (*flexor carpi ulnaris*). 30. Muscle fibres joined on to 42 (*flexor digitorum sublimis*). 31. Tendon passing from scapula (*sic*, ? *coracoid*) to head of humerus (*long head of the biceps*). 32. Tendon ensheathing head of humerus (*short head of the biceps*). 33. Tendon of pectoralis minor passing round to head of humerus. 34. Tendon of 18 inserted on head of humerus. 35. Tendon of 17 inserted on head of humerus. 36. Tendon of 21 on to ulna. 37. Tendon of 20 on to radius. 38. Tendon of 23. 39. Tendon of 22. 40. Tendon of 25 to humerus. 41. Tendinous knob of 29 (*due to presence of sesamoid ossification*). 41a. Tendon of muscle 29 on carpal. 42, 42a, 42b. Tendon from head of humerus to carpal (i.e. *tendinous band from which the flexor digitorum sublimis arises*). 43. Tendon of 30 round notch of carpal. 43a. Tendon (43 *continued*) down metacarpus. 44, 44a. Tendon of 28, running round in notch on metacarpal. 45. Tendon of 24: runs behind radius to metacarpus. 46. Tendon of 27 to metacarpus. 47. Deep ligament: radius to metacarpal. 48. Ligament: radius to metacarpal. 49, 50. Deep ligaments: humerus to ulna. (51. *Tendinous band from ulnar carpal to end of metacarpus*.)

[In the original diagram *A* is tinted in water colours, bone and muscle being much more clearly differentiated than they are in the plate, owing to the yellow and red colours used having practically the same value in the collotype reproduction.]

PLATE IX



NAT. MUS. MELB.

Cleaning otter tails, which can be saved, all but two or three of them.

Captain Emil Dollanz, schooner 'Gamboa', 8 tons, which left Rio Douglas the morning after we arrived, Sat. May 11, came in from the Cape Horn Islands late in the afternoon: Captain, Cristophersen, Portugese, and Chilean. Had been out two months and twenty days from Magallanes and only secured 60 otters, no foxes. All Cape Horn Otters. Chilean ill. Sent him Epsom salts and aspirin; took whole lot together, no harm. Captain Dollanz was the man who shot 'Charlie Ford'¹ years ago when the latter ran amok. He was very interesting. Had once been captain of a Brown Blanchard steamer, but involved other captain in some transactions with fur, and left service; nothing serious. He had been 33 years at sea and knew all there is to know about these parts. Asked him about sailing vessels and the Straits. Told me that any small cutter for example that could sail within four points of the wind had room enough in which to tack, and could get through, but larger ones, such as

¹ *From B.* Charlie Ford the Pirate, a celebrated 'seaman' and Captain, used to tie his men to mast and beat them if they offended him, but he had such a reputation for good luck that he could always get a crew. Had a gun on his cutter, and when other schooners were sealing against regulations, he used to appear suddenly while they had their skins out on shore, hoist the British flag, and fire his gun. Off they ran, leaving him master of the situation and of the seal skins. Once, when Grandi of Bertrand Island, father of man who was drowned, was detained by authorities in Port Stanley, Falkland Islands, for poaching 18 seal skins, Charlie Ford came along quickly and secured 4,000 skins in two weeks, and sailed away safely. Some shepherds had seen Grandi poaching, so when he came into Port Stanley, the authorities allowed him to unload his cargo, and then searched and found the seals and took charge of them, and fined him 100 (?) dollars, which he could not or would not pay for more than a year. Meanwhile Charlie secured his 4,000. Charlie finally ran amok on one of his voyages. Ordered whole crew into hold, and was about to shoot them all, when he himself was shot by the 'mate' who happened to have a rifle and was in his cabin on deck. Threw body overboard, and reported himself in Magallanes, and that was the end of Charlie Ford. The mate now on board the schooner. Charlie was known in Ushuaia as Charlie the dandy. [Charlie's death occurred] outside the Cape Horn Islands.

schooners that could not get within six points of the wind, had not room enough in which to tack, and could not get through. Only steamers can do it with more or less care; but [there are] no lights. Good anchorage to be obtained all along.

Told us that on one occasion he had been captain of schooner and on Staaten Island in 14 days had captured 15,000 hair seals on the beach. Apart from oil, the skins brought 10s. each, salted, in Germany. Schooner belonged to Messrs. Brown and Blanchard. On another occasion he was in charge of a schooner engaged in fur seal hunting off the Falkland Islands. At that time sealing was prohibited, and a government vessel kept watch. He left six men on Staaten Island and sailed off to the Falkland Islands. Camouflaged the schooner, painting hull green, and decorating masts with grass and green foliage so that it was practically invisible when up against the land. Got altogether 1,294 seals, 705 in the first 'knock down'. Sailed away safely for Staaten Island, where the six men had been at work. Luckily sailed into Vancouver Island unseen, but when there, they saw the tops of the masts of the government ship just appearing over some hills between Vancouver and Cook Bay where government ship was waiting. Sailed away with government ship after them, but no wind. Night fell. Rigged up casks so as to make a long raft, and put side lights on this so as to make government ship think they were safely anchored. All lights down and sailed on in darkness. Wind came up and got away, but had to leave the six men behind on Staaten Island. They were caught with seals and got six months each.

June 20, Thursday. Windy night, south-west wind. Brilliant sunrise on snow mountains on Hoste Island. Snowy day. Working at otter tails. Captain Dollanz gave me an otter puppy one month old from Hermite Island. Ken got

a second one about 4 months old (both males) from one of the men from Freycinet Island. Bought a large otter skin from Ken. Dissecting loggerhead duck and drawing. Nearly a foot of snow. Captain Dollanz all day.

June 21, Friday. Snow and south-west wind. Drawing and dissecting loggerhead. Jean and Ken out in afternoon to see snow. Finished the otter tails, 33 all told. Jean has 10. 23 to Magallanes by Captain. Snowing hard in the evening. Wind shifted to north-west during afternoon.

June 22, Saturday. Quiet night, with snow from north-west. Cristophersen (Swede) with his old boat stayed at Douglas. Captain and cutter left at 8 a.m., and will go via South-west Channel and other parts to Magallanes in search of furs. Morning 'backing' chart. In afternoon Ken mended model canoe. Jean and self up hill and took photograph of Rio Douglas and across Ponsonby Sound to Hoste Island. Very beautiful in snow. Wind changed to south-west in night. Claude and Kwan (Yaghan boy, Kwan is really Spanish pronunciation of *Juan*) out in small boat to north to a camp to see the sheep. Full moon, brilliant. Grandi not back yet. Claude back at 7 p.m.; had got a guanaco, and brought some of the flesh back with him.

June 23, Sunday. Very cold night, and everything frozen. Water on tubs had to be chopped out. Everything in bedrooms frozen. Bright sunny day, but sun never gets above hill till after mid-day, and sets at 3.30 away behind hills much to the North of West. At 1.30, went up the hill for another photograph of the Estancia. Grandi came in at the same time. Had spent night at Murray Narrows. Left for Bertrand Island at 3.30 p.m. Very strange evening effect to north-east. Sky deep dull ultramarine, with snow hill, and on this, clump of beeches with brown foliage, and white stems, standing out against sky. Quiet freezing evening and no wind, but not as cold as night before.

June 24, Monday. Cold night, freezing, no wind. Morning drawing chart, and early part of afternoon. Guanaco 'pie' for almuerza; nothing special about taste, might have been beef. Everything frozen. Clothes on line stiff and stark; arms of shirts and legs of trousers stand out stiffly. Domingo carrying up the laundry all frozen; made a remarkable looking bundle of great size. Has to be thawed out.

Bought three small otter skins from Cristophersen, who with Ascencio leaves for Ushuaia to-morrow. (According to Kwan, Yaghan name for large otter is *sē-ān*, and for small otter—Cape Horn—is *lē-āt*.)

Something has gone wrong with their magneto, so they will have to row and sail, but there is no wind.

Jean and Ken had one and a half hours with the two Mrs. Domingos. Got three baskets, two close-woven, one loosely. Kwan made otter-skin sling, but not a good one; used string instead of sinew. Domingo and boy off in his canoe to bring in the rest of the guanaco shot by Claude. Two hours good rowing and more in their canoe.

(*From B*, collected by Miss Hamilton.) *Stāb*, basket, close-woven; *kai-icki*, basket, open-woven; *māp-pī*, rushes; *qūā* (*kiwā*), awl; *bānūkkā*, snow; *stai* (*sty*), frost; *bālūkkā*, rain.

June 25, Tuesday. Freezing night. Cristophersen and Ascencio left at 10 a.m. in small boat. Had to row, as engines had gone wrong. Intended to spend night at Pedro's (Pedro Basuoldo of Hoste Island, *B*) en route to Ushuaia. Spent day writing and drawing chart. Bright afternoon but north-west wind.

June 26, Wednesday. Freezing night. Bright sunshine, but freezing all day in shade. No wind. Three bullocks killed for Ushuaia. Afternoon walked with Jean to point in snow. All snow coated with snow crystals. The whole river and coast line was frozen. All pools frozen over. Shells firmly embedded in frozen sand. Horses kicking up snow

to get at grass underneath. Evidently had been a slight thaw and then all frozen again. Mussel beds all black and frozen above low water mark. Slight snow and sleet and thaw.

June 27, Thursday. Did not start for Hoste Island. Found that Cristophersen and Ascencio had taken five good 'spark-ing-plugs' out of boat, and left their bad one. Ken seeing if engine will run. Fortunately he thinks it will, so we may go, weather permitting, to Hoste Island to-morrow. Grandi expected, but has not yet come. Slight thaw, but fresh snow had covered all old tracks. Domingo still in bed in the shed; the old woman looking very bad, crouching over box with head in hands and one eye shut. Only one garment on, and apparently intentionally opening it so as to shew her big breasts, which curiously are full, and quite unlike the pendant leathery bags of an old Australian lubra. Mrs. Domingo the younger quite cheerful. The two little girls seem quite content playing about in the sun with bare feet and legs.

Along the river, the bridge looking more ancient than ever. Everything curiously black and white save distant purple-black hills. River at low tide, and whole line of banks and sea coast at entrance lined with dead-black broad band of mussels. All the mussels frozen, but this does not seem to kill them. Curious effect with snow rising abruptly from the mussel beds.

In the morning, Domingo had his face painted by old Mrs. Domingo with red lines to assist in recovery(?). Did not look anything like as bad as the old woman.

Everything was curiously silent except when the roar of surf could be heard every now and then away in the distance. Curious sharp contrast in colours—black and deep blue of snow-capped mountains, cold grey sky behind the Hoste Island mountains, and a sharply marked line of light on the horizon where the water of the gulf met the mountains. Odd pairs of Kelp Geese along the shore line, the old ganders

forming white points on the black rocks. When the sun was setting, low clouds of vapour rose over the water in the middle of the Sound, drifting round to the west towards Hoste Island. The same vapour clouds rising along the Rio Douglas.

June 28, Friday. Freezing night, north wind, blustery at intervals. Very dark morning. No light in sky till 8 a.m., when red tinge on clouds to north-west. Glass low and falling. Decided not to attempt Hoste Island. Ken and Enrique out to camp to cut *Leña dura* for food for cattle. Grandi came in at 11 a.m. and left for Ushuaia at 1.15 p.m. Small cutter from Ushuaia at 3.30 p.m.

Chart shows marked difference in configuration of Navarin and Hoste Island. Hoste very mountainous everywhere, with the whole surface penetrated by long tortuous channels or sounds. The latter practically absent on Navarin, which has a much less indented coast line, and open flat or, undulating country in its eastern parts. In this respect it resembles Tierra del Fuego which again, save on its western side, is similar to Navarin to the south and Patagonia (eastern part) to the north. Ken says no 'minerals' on Navarin, but everywhere on Hoste Island. No guanaco on Hoste. West coast of Navarin, along Murray Narrows and further south, seems identical in structure with opposite coast of Hoste Island.

Ken Williams says that peat was actually dug up and used in the old Mission station on Tekenika Bay. Many parts, such as flats on margin of Rio Douglas, look like peat in the forming. But perhaps climatic conditions not now favourable. Ken says coal on Hoste Island.

From this date until July 3, the diary is in a small rough notebook hitherto referred to as B. A comparison of this small book with the larger one shows how carefully evidence was tested and statements corrected before a final entry was made, and Miss Hamilton has said that the material at the end of the small notebook was not corrected.

Sir James Frazer has transcribed the greater part of the final entries in the small book from June 30 to July 3, and his transcription has been compared with the entries in the small book, and mainly followed.

June 29, Saturday.¹ Left Rio Douglas at 10.30 a.m., and arrived at Piedro's at 3 p.m. (Plates X-XII). Wind north and north-east. Spent evening talking with Piedro and his Yaghan wife.

Name of Mrs. Piedro, *Wěn-dworlīki* (*drworlīki*)-*kīpa*; *worl-ī-tiis*, pretty fine; *worlitiis-kippa*, pretty girl, always called this when young; *worla*, day; (*worl* = *wall*).

Kūsh is a berry now called *Āman*. Berry used to be called *kūsh*, but man of this name died, so changed name of berry. It is a red berry about the size of a small cherry or large currant.

Yāhāti, anything little, like a child.

(*m*)*ūrū*, many.

ūrū yēkka, to move a little aside.

ūrū, straight ahead.

mūrt au(ow)-wīna, sit down.

al-au-wīna, drink.

āt it-ānuma,² eat.

hai-īna, walk.

ākilla,³ ice.

pānākka, snow.

te ish, hail.

pēllāker (*k* = Spanish *j*), rain.

lāna, red headed woodpecker.

kūla-ākkā (*kūlakka*), wigwam; *kūla* is wood out of which it is made.

ānān, canoe.

¹ From here on, Miss Hamilton's narrative beginning on page 108 gives a full account of events, and forms a setting for the data collected in the small notebook.

² Doubtful transcription.

³ June 30 in pencil above remaining words.

kächüing, another name for mussel.

*Porsch*¹ is small volute shell; large one is *aflün*.

*Pīna*¹ is a more conical patella; *ungwaia* or *ā-waia* is flatter.

arūf is small mussel.

Yākā-shākā is name for Murray Narrows.

Ācāsāgānicks is name of man with 7 children.

Lau ī quēllūs is wife of same man.

Yaghans South, West, and East, three different dialects.

June 30, Sunday.

sun, *lün*.²

moon, *hänūker*² (*k* = Spanish *j*).

star, *āpérnish*.

fire, *būsh-ait*.

wood (dry), *ai en*.

stick, *lāpertish*.

one, *kau-erli*.²

two, *kampēipi*, *kūmpeipi*.

three, *mūlten*, *mātā*.

plenty, *wūri*, *wūlrū* (Onah count to five).

evergreen beech, *shushgi* (*g* is soft).

'Fruit' of *shushgi*, *oitchi* (round, and may be as big as orange).

deciduous beech, *katern* (same name as 'fruit').

deciduous beech, *haniss*.

'fruit' of *haniss*, *āssūf* (round, and may be as big as orange).

'black' fish, *lūk* (*k* = Spanish *j*, sounded strongly).

guanaco, *ām-erra* (*üra*). Yaghans (not Onah) used to spear them: never used boleras (stones): used sling as well.

sūshani (fig. 10, no. 6).

bone, *hātūsh* [see p. 72].

aowea (pronounced *au-ia*), one point, for seal (fig. 10, no. 4).

¹ See entry for May 29.

² See entry for May 29.

wai-ī-kī=(*wai i gui*, pronounced *wai-ī-ki*), two points, one on each side. [p. 134.]

'Yaghan not use bow and arrow.' *Yerkush* (fig. 11, nos. 3-5) used before bone was employed for spear-heads. *Yūāllūk*, a Yaghan, was a woman who invented arrow-heads. Two brothers and a sister. Brothers used to kill seal with pointed stick. Sister thought, and invented arrow-head. Sister one day put arrow-head at end of spear. When she died, Yualluk went up to heaven, and is now a star. Stone arrow-heads always found in graves or washed out of middens. No stone spear-heads now.

Fighting-stick, *lō-ī-makūa*.

Brother of Bessie¹ (*Kuana* or *Kuāna*) is ninety years old, named *Hāmā kā(ū) nanchis*.

Wūl-lā-dākā yāmāna-kippa, man who would not look at woman, brother of Bessie. Very good fisher, and hunts well and doesn't interfere with other women. Looks after his family and works.

Hūn-mūsh-ā-kush, name of place where there is a special stone, connected with old ancestor, *Hūn-mūsh-ā-kūsh*. Name of mountain on which it is, *Wat-to-wor-ā-hūsh*.

Kelp, *ā-hūsh*.

When man wants to marry girl, he says to her, *hai-kos-ī-kai-ya*, I like you, I want you; *au-ā-tūkū*, to get married.

Stone knife, flaked, [with] handle, used for cutting meat, not for fighting, *pūkūnna*.

All used for fighting: [fighting stick], *lō-ī-makūa*; spear, sling.

When sister, mother, father, daughter, son, or brother die, the women cut their hair and arms slightly with knives. Men do not cut at all.

*Cush-pik*² is the spirit part of man. When dreaming, the

¹ Miss Hamilton collected information from her. Bessie also appears as Juanna.

² *Gus-pish* in B. Correction to *Cush-pik* given by Miss Jean Hamilton, from Mr. Bridges.

spirit goes out of him. When he dies, the spirit remains alive and roams around place where he died. No ceremony of cutting themselves [for] some time after death. Any time for a year after, if they come together, they weep, &c. On day of death, someone makes speeches praising the dead man. Speak well of deceased and family. Speak this to the spirit. Move camp and burn everything belonging to dead. Kill his dogs and do not name him. If any other person of same name as deceased, change name.¹ (?) No idea of reincarnation according to this informant (Acasajanicks,² 39 years old). New born child gets spirit 'from nature'. Spirit of dead person always stays where it [person] dies. Some imagine they see the spirits. Informant knows nothing of spirits' lives except that they always remain. Same informant's words: 'White man got his heaven. We have not.'

kun, seal oil; they drink this; like Scot's Emulsion.

Du-mūsh-kai-pānna,³ hermaphrodite, woman's voice and laugh.

July 1, Monday. From Bessie (Plate XI) at Piedro's.⁴

Three kinds of shags: (1) *wā-sāni*, with white neck and breast, and back of neck black; (2) *yērshick*, black; (3) *ā-lōn*, black neck and white breast. Yaghans eat these birds, and most eat eggs, but Bessie does not.

Wā (or *ū*)-*sāni-mai-wai-ya* (or *īa*) is the name of Piedro's cove, *wa-sani* signifying shags, *mai ya*, going out to fish, *wai ya*, a bay: the whole meaning 'The bay of shags where they go out to fish.' There are precipices close by where the shags come to roost at night, and can be heard calling out.

Agai i a, Ponsonby Sound.

Ā-hūsh ūkka (or *ākka*), House of the Wild Man, is the

¹ Cf. account of *Kūsh* berry, June 29; *Change of name*, July 2.

² Spanish *j*.

³ Entry labelled July 2, but on page labelled June 30.

⁴ *J* in margin; i.e. collected by Miss Hamilton from 'Bessie'.

name of a promontory on Navarino, just at the southern entrance of Murray Narrows.

Yākā-shāka (*āshāka*), Murray Narrows. [See p. 108.—J.H.]

Ūsh kūsh āmāk(ka), on Murray Narrows; *āmāka*, the back of anyone; *wash-mīk*, small of back.

Ai kŭlŭ kūniālākŭ-au-ēn, I want to make my camping ground here.

Wind quiet and not very cold, but cove mostly frozen over. Morning up into woods.

Beech trees, many of them with curious growths on branches, on which the 'fruit' *katern*, &c., grows, that Yaghans eat either raw, or cooked in ashes. *Ashamai-if*:¹ 'fruit' grows on this (like yellow *katern*) = *oitchi* (*oitich*). These growths occur on some of the now deciduous beeches. May be hundreds on one tree, and reach great size on the larger boughs. *Oitchi* grows only on these knobs.

Shōn-upushki, Yaghan name for a purplish shell on kelp, used for necklaces.²

Yo-kālīa, Yaghan name for small hawk. Chimango is Spanish name.

Hanuf,³ bad man of Yaghans. Some men at Kanusakka on Hoste Island had a camp there. One man had a wife and child in the camp, and was making a harpoon there. The men left their wigwams, and went down to pull their canoes on to the beach. A *hanuf* saw them. The man called his wife to come and help him. She left the child in the wigwam. *Hanuf* came and killed it with harpoon. Left this through

¹ *Ashamai-if* appears to be the knob on which the fungus grows. Cf. account of *katern* on p. 64, especially footnote, and also *shushgi* on p. 100. Miss Hamilton notes the following names for *katern*: *katun*, *usuf*, *suchipu*, *auchik*; the colour is whitish-yellow outside, and much whiter inside. She notes another fungus which is much more pear-shaped, of a mottled tortoise-shell colour throughout, called *meama*, *ushweem*, *keein*, or *kikilosh*.

² Some of the specimens of *Photinula crasshayi* have holes, and may have been so used.

Hanush or *Han-ush*: Miss Hamilton, from Mr. Bridges.

child. Father back. Other men in another camp saw *Hanuf*. All went in search. Could not find him that night. Found him in cleft high up. Killed him from above with stones. Remains as petrified man.

Bessie's father once went up to the lake in the mountains in Hoste Island (Kanusakka on Beagle Channel). After that there came a time of terrible snow. No day for eight days, only darkness and snow and perpetual high tides. *Hanufs* were all killed. Not been seen since.

Boy once went out along beach in search of fish; found one; mother pleased. Went out again farther. Wild man offered him bit of meat. Father told him not to go out again. Went one day. *Hanuf* took him on his shoulders away to the lake on the mountains. Kept him there where he played with little boys who spoke Yaghan like himself, but in very low voice. *Hanuf* brought him down. After this, father went up and saw wigwams. Later on, snow fell, and *hanufs* all killed. Bessie remembers her father, very tall, standing up to his shoulders in snow. Later on, some Yaghans went up, and found wigwams broken down.

Evening in hut with Yaghan man, wife, and seven children, and another man, singing songs. Really Alacaluf songs, but not those sung in the 'Jak house', as the children had not been through this, and might not hear them. Two Yaghan songs sung. Very simple repetition of words like *wai-a, re-re, &c.* Know no meaning to them.

July 2, Tuesday. Piedro Basualdo Chandiaz (mother's name).

wī-fäl, name of animal, twice size of otter, golden tinged fur, known to Yaghans. Bessie saw one with ten young in quiet water swimming. Never been caught.

Hāni-sīsta-wēlla, parasite on beech, like mistletoe.

Ta-wella, name of basket.

Chillāna (Spanish), medium-sized flat-bottomed boat.

Chăta (Spanish), large flat-bottomed boat or lighter.

Chăŭta (Spanish), very small flat-bottomed boat.

Ānăn, Yaghan for canoe.

kauarli, one; [these numerals are] pure Yaghan spoken in the south.

kampeipi, two.

mūtton, *mātton*, three.

chī-la, more.

wŭlrŭ, many.

mā-mīna (South Indians), hurricane.

cā-shăka (Indians round Pedro's), hurricane.

Yaghans extend West to Cape Divide. Never far from Brecknock.¹ Used to marry with Onahs of Great Success Bay. Clements got his Onah wife from here. 'William' has had nine wives, and one is still alive. First wife had ten children, but all dead. One woman has had nine husbands, no children. One woman (Alacaluf) married to white man kills all her children.

Snow storms at intervals all day; sunshine between. Photographed the Cove (Plate X). Clements with wife (Alacaluf) came in small boat at 3.30. One grown boy by Onah wife. One half-caste girl by Chilean father. Two girls, young, by Alacaluf woman. Made up old Toldo (Plate XI) with beech twigs for bedding. Woman and children stayed in boat until Clements had talked with Yaghans already present and decided on Toldo. Men repaired the latter. Boy went out in search of wood. Clements had had no luck in hunting.

Lappa, mussel, was name of man who died; now called *Cachuing*.² *Tawella* is name of man who died, so changed to *Stăb*. Man named James died, so changed another man's

¹ Miss Hamilton, from Mr. Bridges: 'Western limit of Yaghans, end of Gordon Island; eastern limit, Sloggett Bay.' (Sloggett Bay, Tierra del Fuego, c. 66° 20' W., 55° S.)

² See p. 100, s.v. *Kachuing*.

name who was called James to Santiago. Two men called Alec changed to Alexanjero. Man named Juan died; boy's name changed to Janchiko (Domingo's son).

Cove looking very beautiful in fresh snow. Powdering of snow gave curious very delicate 'madder-pinkish' colour to deciduous beeches high up on mountains. Remarkable blue on distant snow hills and water of the Narrows. All ice cleared out of Cove except upper third.

July 3, Wednesday. Blustery, south-west, during night. Slight snow and dull morning light. Light shining from Toldo at night. Bed made of beech twigs. Baskets hanging over side of boat, and bundle of green rushes. Down to Toldo to see Clements. Snow storms at intervals.

Kälälä, gull kept as pet by Yaghans, and carried on boats when travelling.

Wūlits(a)-wulēua, 'nice' boy.

Yaghans talk of two animals with horns (deer?) long ago on Hoste Island. The deer came down to Kasuani Point in winter, but were killed in the very hard winter when *Hanufs*¹ died out. In hard winters all kinds come to shore and cove to be fed. Even foxes come down.

Snow during night, and snowstorms at intervals during day. Arranged with Clements to return to Rio Douglas after visit to Ushuaia and then to go hunting later. Terms, tucker and 20 dollars. Grandi came in at 6 p.m.

Here the record in the field book ends. The following entries are from a small book (Walker's Diary for 1929) in the possession of his daughter, Mrs Arthur Young.

July 4, Thursday. Wind during night. Wind S.S.W. Dull morning, mostly snowing. Bad weather in Narrows and Sound. Unable to leave. Clements still in camp.

July 5, Friday. Very bad during night. Attack as before at Rio Douglas.² Helpless.

¹ See p. 103.

² See pp. 65, 122, 123.

July 6, Saturday. In bed. Bad and helpless. Ken left for Ushuaia to see if Doctor would come.

July 7, Sunday. Clements and family left for Ushuaia. Unfortunately cutter in with drink, and wild nights. Ken away. B[essie] and Pedro helpless.

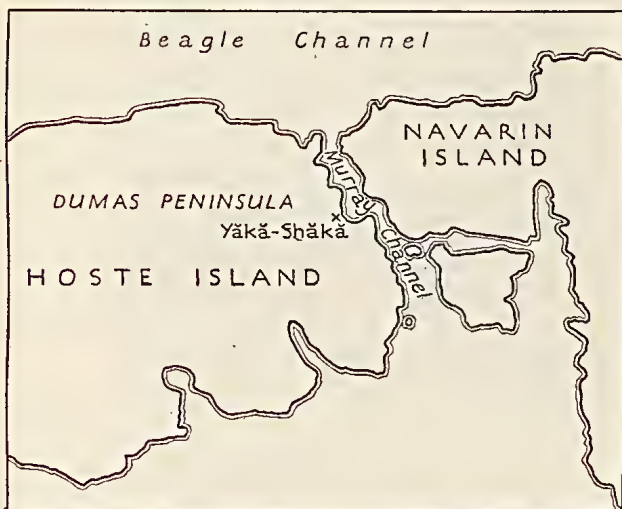


FIG. 7. Sketch showing Murray Narrows (in Murray Channel) and cove (x) where Spencer made his final camp. Both the cove and the narrows are called Yākā-Shākā in the Yaghan tongue

July 8, Monday. Ken back from Ushuaia with things sent by Señor Martin Lawrence¹ and Capt. Alvarez. In afternoon took the Indian family away to Ushuaia. B. and Pedro helpless.

July 9, Tuesday. Beautiful day. In bed awaiting the Gov. steamer that is probably going to Picton Island² on its way here. Snow disappearing. Everything very peaceful.

July 10, Wednesday. Quiet night. Ken and Henrique across to Navarin to find if Gov. steamer coming.

Sir Baldwin Spencer made no further entries in the diary. He died in the hut on Hoste Island on the Dumas Peninsula near the Murray

¹ See p. 123.

² North of Lennox Island.

Narrows, at 12.30 a.m. on the night of July 13-14, 1929. The native name of the cove according to Miss Hamilton's diary is *Yākā-shākā*, and its place on the map is near the point marked \times . The remainder of the narrative is by Miss Jean Hamilton, who was with him when he died, and, with Señor Ken Williams, brought his body back to Magallanes.

MISS HAMILTON'S NARRATIVE

June 29, Saturday. We left Rio Douglas, Isle Navarino, at 11 a.m. in a small 2 ton cutter, accompanied by our host Senor Ken Williams and his man Enrique. Our destination lay through the Murray Channel between Isle Navarino and Isle Hoste. This channel contracts at one part into the Murray Narrows. After passing through the latter, we put into a little cove on Dumas Peninsula, Isle Hoste, called by Yaghan Indians *Tākā-shākā* (Plate X).

Here lived an old woman who spoke a little English. We hoped to collect her, and take her back with us to our camp at Rio Douglas. The idea was to use her as a 'go-between' to communicate with Domingo's old discarded wife who spoke only Yaghan, and who was known as the witch of her tribe. She had had the honour in the past of strangling or finishing off any person thought better out of the way. The Professor was most anxious for our visit to be a success.

The journey took four instead of two hours. The sea was rough and stormy with a north-west wind against us. A kind of seat in the 'hold' in front of the mast was made for us, of which I took advantage as it was cold as well as rough. The Professor, with only his legs in the 'hold', cheerily faced the weather and the seas we shipped.

The sun was just setting behind the mountains when we arrived at 3 p.m. The bay was frozen over, so we were forced to anchor at the entrance to the cove and go ashore in a small row boat. Snow covered the landscape. A more lonely looking place would be difficult to imagine! From our cutter

PLATE X



Entrance to Cove, Murray Narrows, Isle Hoste,
showing cutter in which Spencer arrived



Another view of the Cove

15. April

we could see smoke curling up the wooded valley from a deserted toldo (wigwam) on the little beach, and also from a primitive tin hut tucked farther back in the cove which we were to occupy (Plates XI, XII). Behind the snow-covered mountains which sheltered it was boundless wild country.

The encampment consisted mainly of Indians returning by slow stages from otter-hunting expeditions in their chilanes (flat-bottomed boats which have somewhat displaced canoes) to Puerto Mejillones, a desolate bay farther north on Isle Navarino, where the Chilean Government have of recent years made a small Reserve and given to each Indian a certain portion of land to cultivate. Civilization, such as it is in the South, has told heavily on the Yaghan tribe, of whom, according to Señor Williams (son of Rev. J. Williams, formerly missionary at Rio Douglas), only 50 are surviving of a tribe which numbered at one time nearly 3,000.

We had brought with us provisions, mattresses and blankets, &c. The afternoon was drawing into evening; the shadows began to lengthen earlier than usual, so we were soon sitting round the fire eating from the pan fish that the old woman had caught and cooked for us. The evening was spent talking and getting friendly with the natives. Like other humans the latter possess virtues and failings, but the Indian did not fascinate the Professor as did his Australian blackfellow, the Arunta. Therefore to see the 'great man' later in the evening drinking *matè* with them in order to further good relationship, as he put it, was an unforgettable sight. His neat immaculate appearance made a strange and attractive picture as he sat amongst these unwashed and unshaven natives, who though poor, slothful, and filthy with neglect, were given the same graciousness and quiet understanding courtesy which he extended to everyone regardless of race or quality. His bright remarks produced low chuckles of enjoyment from the old woman Juanna (Plate XI), whose

delight was childish when he would ask again and again for more, and the bombilla would be passed from one to the other. (The Indians have had so much communication with Spanish and Chilean sealers that most of them drink *matè* and smoke cigarettes whenever they can get them.)

June 30, Sunday. Brilliantly clear day with sunshine for about two hours, so the Professor took photographs of the Yaghans and their toldos and distributed sweets to the wee piccaninnies whom he had watched with great interest and surprise early this morning go to a frozen pool near the hut to wash. They must have extraordinary powers of resistance, as the children walk about in the snow with nothing on their feet. The rest of the day he talked with the young Yaghans round their camp fire about *Cũsh-pik* (spirit part of man). He says that the younger generation care little as to their past; in fact some of them are rather inclined to be ashamed of many of the beliefs of their ancestors. Physically and mentally lazy—*Quien sabe?* (who knows?) seems to comprise their philosophy. The Professor says that the old woman is the only one of any use scientifically, but it is going to be difficult to get her away. I went with her and the Yaghan boy to fish at entrance to cove. The air was decidedly chilly, but a large fire in the boat helped to keep us warm. The boat was tied up to a kelp plant by hooking it over a rowlock. Sitting on an old sheep skin on the floor of the chillàna, Juanna appeared transformed into a witch—jabbering Yaghan to the fishes as she moved her line gently up and down in the water, listening intently meanwhile. Now and then she would softly whisper in English, 'Ah! big fella pass by', and a second later 'big fella' would be in her basket. She said that she was able to bewitch the fish on to her line and also to come to the shore in time of famine, that being the reason why she caught them all. She was always fishing and loved it! Her age was 59 years. She was short and tremendously billowy;

PLATE XI



Yaghan Indians, Murray Narrows, Isle Hoste. The woman on the left is Bessie, or Juanna



Framework of Toldo (wigwam) after departure of Indians, Murray Narrows, Isle Hoste

181. 181. 181.

her face was broad, with wide flat nose, her eyes small and wide apart; she had huge lips and large brownish yellow horse-like teeth. Her face was quite free from sinister expression, and when she laughed as she was always doing, one forgot one's first feeling of repulsion.

The sight of the old woman after she had finished her meal, cutting from a piece of firewood an enormous splinter which for the space of nearly twenty minutes she would vigorously use as a tooth-pick, never failed to hypnotize us. The Professor, after his first quick shudder of horror, would quietly extract pencil and notebook, the latter always in and out of his pocket, and unknown to the all-absorbed Juanna, he would endeavour to make pencil sketches of her.

July 1, Monday. Dull cold day. The Professor as usual up very early putting breadcrumbs on all the ledges for the Dush-ush birds; their gay plumage looks very beautiful against the snow, and they are becoming most friendly, and unperturbedly hop all round him picking up bits of food. We are eager to get away whilst the weather is calm, but the old man is difficult and we want Juanna very much. This afternoon all the Yaghans worked very hard cutting the ice free from the cove. In the evening we went over to their camp and listened to their singing. Twelve of them, men, women, and children, squatted round their fire chanting low dirges; very simple repetition of *wai-a-wai-a-re-re*, &c. The words, they say, have no meaning to them, and have been handed down in parrot form from their ancestors, and all their songs originally came from the Alakaluf tribe. Many of the songs can only be sung in the 'Yak-house', a special house at the settlement (Mejilliones) amongst the others, supported by poles painted red. In this sacred tent boys of 14-15 are initiated into the secrets of men. This ceremony of puberty has to do with the old belief that in ancient times women used to rule. They were the hunters and fishers, reserving for the

men the more bothersome duties like housework. Having freed themselves from this servitude, all the women who knew the secrets were killed by the men, and girls growing up were condemned to the humbler duties again. The initiation of the young men is supposed to prevent women from taking their dominion over men and making them again lead a dog's life. The Professor has no faith in these half-civilized young Yaghans, and will accept nothing until he has talked with some of the old men. We were glad to leave their camp, the smoke from the fire and their smoking were awful.

July 2, Tuesday. Heavy snow fell during the night, and the cove looks very beautiful in the fresh fall. The distant snow mountains and the water in the Narrows are a wonderful deep blue. All the ice has gone from the cove! The Indian (Yaghan) called Clements with his Alakaluf wife and four children came in at 3.30 p.m. He was one of the old men to get in touch with whom the Professor, advised by Mr. William Bridges, had originally come south to Ushuaia. But on arrival we had found that both he and another old man we hoped to see were away otter hunting, and exactly when these wandering nomads would return no one could quite say. It was therefore a very pleasant surprise when these wanderers appeared in their rather battered looking chillàna. For the past two months they had been roaming the solitary bays near Ponsonby Sound, building their branch huts and existing on shell-fish and anything else they were lucky enough to kill for food, fighting the bleak hostility of snow mountains and treacherous icy winds, in order to get a few otter skins which they sell for food or preferably drink. The expedition from a worldly point of view could not exactly be called a grand success. They had two otter skins and two small red foxes. They had no food and were hungry. They covered the frame of the deserted toldo, which consisted

merely of some sticks driven into the ground in a semi-circle converging to a point and fastened together above with an opening to the east. A good fire of logs was soon made in the centre. This is always kept going during their stay, and destroyed only when leaving camp. As soon as they settled in, the Professor, who had previously approached them with friendly greetings, talked with Clements, whilst I sat around a smoking fire with the family. Unfortunately they spoke only Alakaluf, so conversation was very limited. Old Juanna, after cooking us a good meal, visited the newcomers, consoled with them over their bad luck, and gave them the food left over from our meal. The evening was spent listening to stories old Juanna related in a husky whisper about 'Han-uf', the bad man of the Yaghan tribe, the Professor struggling quietly to make pencil sketches of her as she dramatically told her stories.

July 3, Wednesday. The old man has at last given his consent, and we leave with our prize to-morrow for Rio Douglas. The Professor has also been very successful with the Yaghan Clements, and has arranged with him to come with his family to Rio Douglas camp. He leaves to-day for Ushuaia first, to sell his skins, and will return, weather permitting, in a week's time to Rio Douglas, Navarino. The 'great man' is really pleased with the result of this, at first, rather doubtful trip, but is now chafing badly at the delay, so eager is he to start real work amongst them.

July 4, Thursday. Outside the cove it is blowing a gale. The weather is too bad in the Narrows for us to leave. South-west wind and heavy snow squalls at intervals all day. The Professor walks a little every day regardless of weather, but beyond the small cove where we are camped, the country is almost completely unknown. Provisions were beginning to get low, so the old woman made us a large quantity of dough cakes, a mixture of flour and water well kneaded, and cooked

in boiling fat. The Professor had really to be restrained, he liked them so much. Certainly no one would suggest that he was not still young; so amazingly well he looks, and his enthusiasm is that of a school boy over the dough cakes. It was but very reluctantly that he agreed that 'perhaps they might lie heavily on one's chest'. All plans for work are complete for the rest of our short stay in Rio Douglas, Isle Navarino. The wind has dropped and we hope to leave to-morrow morning.

July 5, Friday. During the night, at 12.15 a.m., the Professor had another bad and sudden illness, the same as before at Rio Douglas, leaving him quite helpless. He said this morning that this attack was worse than the previous one. In spite of this he firmly and strongly refused to give his consent to Señor Williams going in his cutter to bring the one and only medicine man down south, living in Ushuaia 18 miles away by sea. Smilingly he blamed the dough cakes he had eaten with such enjoyment, and vowed never to eat them again, saying that it was only rest he wanted as before, and he would be well again in a couple of days. His big grief was that he was wasting valuable time, but he was perfectly comfortable, and hot bottles, just as he had in Rio Douglas, were all that could be desired. Although far from satisfied, we were forced to accept his firm decision.

July 6, Saturday. The Professor is not making any progress; no real sleep, only troubled dozes during the night. After many hours of hard talking this morning, he has at last consented to Williams going to Ushuaia for the Doctor, saying with a whimsical smile, 'Well, just to please you: let him come, but he cannot do any more than is being done.' He sat up in bed, wrote down the fullest details for the Doctor, and at the same time a letter to Señor Martin Lawrence in Ushuaia. The young Indians are keeping very quiet, warned by their parents not to make a noise near the

hut. However, the Professor says he likes to hear them about. Señor Williams and his man left for Ushuaia at 11.30 a.m. and hope to return with Doctor late to-night.

July 7, Sunday. Last night a dreadful south-west wind blew and blew, just thundering round the hut. Señor Williams and his man were unable to return on account of the weather, but came in early this morning. No Doctor aboard: he was ill in bed and unable to come. He sent medicine and ordered a diet of eggs and milk. The Professor had no restful sleep: slightly delirious, talking all about the problems of the Indians, &c. A cutter came in late afternoon and brought drink. All night the Yaghans were diabolically drunk. Luckily the Professor heard very little, the wind helping to drown their orgy. The sun is shining brightly this morning and the cove looks very beautiful, for which one is grateful, as it makes it less dreary an outlook for the Professor from the window.

July 8, Monday. Another bad night. The Professor seems unable to get restful sleep. He is so bright during the day, and says he feels much better. Shaved sitting up in bed this morning and talks cheerfully of getting up for a while to-morrow. Had another serious talk with him about returning to Magallanes, but he is so desperately keen to go on and finish up his work here first. He spent quite a little time talking to Señor Williams and myself about the trip he intends making to Camero in Smyth's Channel later on, where he hopes to get in touch with the most degraded of all tribes—the Alakalufs. The newly-planned idea is to charter Capitan Dollonez's 12-ton schooner, instead of going in the Government boat very kindly offered to us by the Capitan of the Port in Magallanes. This new scheme has engaged the 'great man's' mind most of the day. The Dūsh-ūsh birds are hopping gaily about on the window ledge of the hut, and manage in quite a miraculous way to escape the many

watchful half-starved cats who lurk about waiting their chance. Juanna goes off every day after she has had a few words with the Professor to catch fresh fish for him. He enjoys these very much.

July 9, Tuesday. The Professor is not improving! Señor Williams and his man went across to Woolya (home of the famous Jemmy Button) in the cutter to try and hear news of the Government boat. It is reported to have left Magallanes and to be due this way in a few days. He was also able to send my note across to Señor Martin Lawrence in Ushuaia, and the Governor's carabinero is expected to arrive in a small launch with sleeping draught late this evening, but the weather has changed, and he is apparently not coming to-night. Dull dreary day in every way.

July 10, Wednesday. No change. The 'great man' quite cheerful and says he feels a little better and most comfortable in bed. He eats a little broth, fish, and eggs each day with interest. However, after another long talk this morning he has consented to return to Magallanes in Government boat when it comes: see a medicine man, write up his notes, and come back here a little later to finish his work. Seeing that his decision had greatly pleased, he read a little from his beloved Charles Lamb. A pocket edition is always by his bedside, and is carried everywhere with him. He remarked with pervasive humour that Charles Lamb was the only 'great' that he would give much to be like.

July 11, Thursday. Señor Williams and his man left early this morning for Ushuaia, taking a letter to Señor Martin Lawrence asking him to arrange definitely for us to return by the Government boat to Magallanes, and pick us up here, not at Rio Douglas. The Professor is very anxious to go to Navarino first, but Señor Williams agrees with me that the Captain of the Government boat will take us round to Rio Douglas and wait, while I go ashore and pack together our

luggage and Museum Collection. The Professor believes that he will be well enough to go ashore and do these things for himself. They returned late with the awful news that the Government boat has not left Magallanes and may not be here for weeks, but on the strength of my letter Señor Martin Lawrence and Capitan of the Port of Ushuaia kindly arranged with the Capitan of a small 80-ton schooner called the 'Renalto' leaving for Magallanes on Sunday morning to take us as passengers. The Professor took a sleeping draught and had a better night, although it did not act until very late.

July 12, Friday. The Professor appears to me rather weaker, but quite cheerful and bright. His interest in himself so secondary compared with his work. He is so absolutely selfless that his thoughts always are for others, never for himself. Although he does not think the Indians at all lovable, he is full of sympathy for this lost race, who in being pushed back into the last corner of America, have sunk again into utter primitiveness. He appears content to leave on the schooner now, but lurking in the background is the hope that perhaps to-morrow he will be so well that going back hurriedly will be quite unnecessary. About 10.30 a.m. he fell into a real good sleep which continued until 4 p.m. After taking a little food he went off again to sleep, breathing quietly and naturally and without effort, and did not stir until nearly 8 o'clock. Very much refreshed after so much good sleep, he talked about plans for Magallanes, the labelling and the getting in order of the Museum Collection, and the packing up of belongings at Rio Douglas to-morrow.

July 13, Saturday. During the day the Professor seemed much improved, but restless towards evening. He talked brightly of the morrow on the boat, and if the weather were good, of the photographs he wished to take en route for Magallanes. The old woman had killed a chicken and caught many 'big fella' for the Professor to have on the journey.

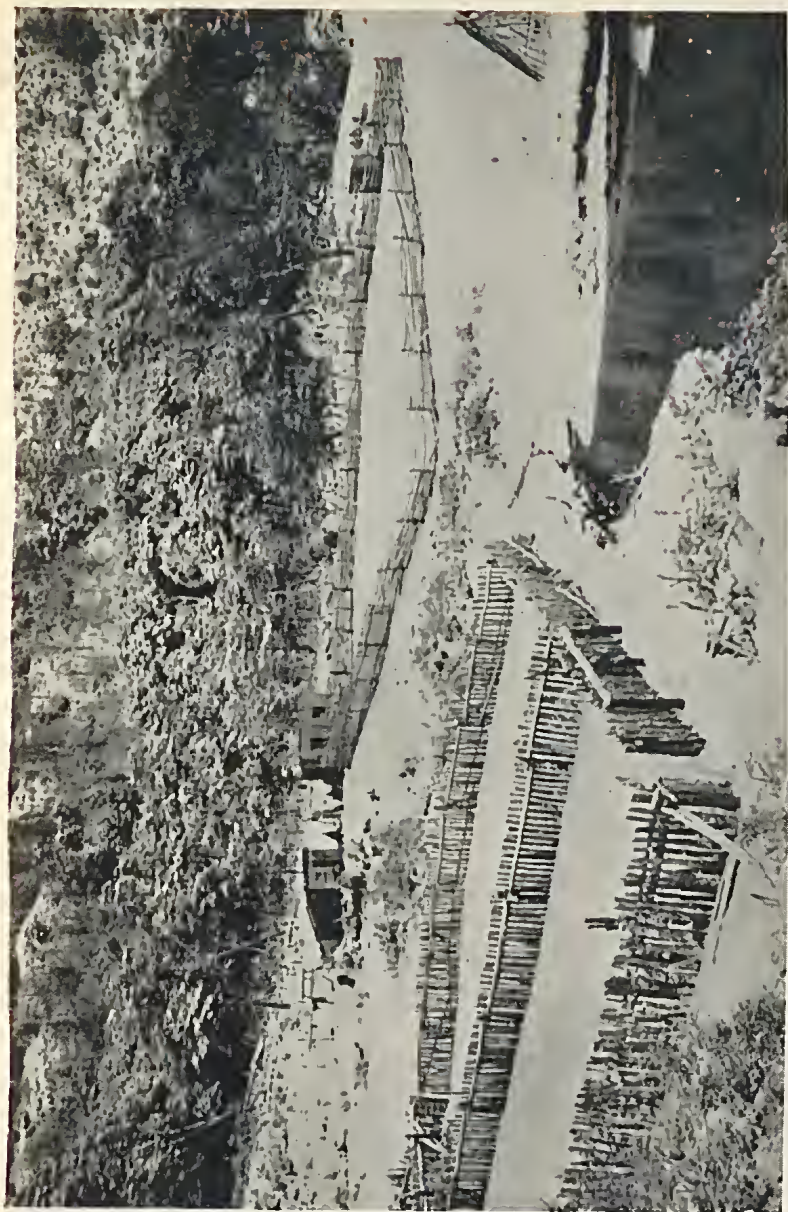
After a few not very restful dozes he wakened again, and talked. Said he was warm and very comfortable, and at 12.30 a.m. he sat up quite suddenly, and quite peacefully passed away.

Journey from Murray Narrows.

July 15, Monday. The schooner 'Renalto' which was to have taken us as passengers came in at daybreak as expected. After some rather desperate thinking decided to take the Professor back to Magallanes in the schooner for medical inspection, instead of having Doctor from Ushuaia and burial on the Island as suggested. At mid-day I went with a Spanish sailor in a small cutter to Rio Douglas, Navarino, to collect belongings and the scattered Museum Collection. Returned in late afternoon to Murray Narrows accompanied by Señor Claud Williams who together with his brother and the Indians (the Yaghan Clements had returned that morning) helped with the necessary preparations for the journey.

July 16, Tuesday. Left Murray Narrows, Isle Hoste, at 9 a.m. in the 'Renalto', Captain, three crew, and Señor Ken Williams, who very kindly accompanied me to Magallanes. Heavy rain and hail squalls. All day going along the Beagle Channel, and entered the North-West Arm and anchored just inside Puerto Ollo for the night.

July 17, Wednesday. Sailed at daybreak. Passed through the North-West Arm into Pomroy Channel. Bumped into small iceberg off the Great Romanche Glaciers. Heavy snow squalls, lost our way for a time and eventually forced to anchor. When the weather cleared, we saw smoke and lights from a wigwam, of Indians who were otter hunting on the north-west point of Jordon Island, which divides the Beagle into the North-West and South-West Arm. Crossed Whale-boat Sound and anchored in a quiet sheltered cove called Burnt Anchorage. The cry of the paddleduck and the rather



Camp at Murray Narrows, Isle Hoste, Tierra del Fuego. Spencer died in the hut on the right-hand side

ST. JOHN'S COLLEGE

human coughing of a few seals swimming round the schooner were the only sounds breaking the intense stillness.

July 18, Thursday. Started again at 7 a.m. next morning. Passed between Burnt Island and Smoke Island into Desolation Bay. We made slow progress against the south-west wind and continuous snow squalls. Captain very worried! The sailors superstitious. Lost our way again, or rather mistook a bay for a channel. Captain says, 'Worst trip he has ever made.' Forced to anchor again at 2 p.m. in Puerto Chico. Entering Paso Brecknock to-night impossible; even in our sheltered cove the swell beat in and rocked us heavily.

July 19, Friday. During the night the wind blew us on the rocks, and the men were forced to go ashore in row boat with ropes and pull us off. Left Puerto Chico at 7.30 a.m. Raining heavily and big seas, with north-west wind against us. The awful belief is that everything is against us, and before we were out of Cockburn Channel, our engine failed us and the sailors again had to get into the row boat and tow us into a sheltered bay close to Cape Turn on Clarence Island. After an hour of desperate work on the engine, the Captain sent word that he wished to speak with me. All were gathered round the engine, and I was informed that the crank-shaft was broken, and made aware of the fact that we had suddenly become becalmed. The dreadful winds we had fought for days were no more. We had a dead calm sea and steady rain. The crank-shaft could not be repaired and there was no wind whereby to sail. The Captain had been talking with his crew who were superstitious and difficult, refusing to risk their lives by rowing in small boat along coast to San Isidro lighthouse 20 odd miles away for help unless the Captain accompanied them. The latter was seriously worried and made the following propositions: (1) To stay on schooner while he went for help. (2) To put the Professor ashore in a safe place and all go in small boat to

San Isidro lighthouse. (3) To wait in hope of wind. (1) I refused to stay on schooner without the Captain. (2) If they put the Professor ashore, I also went ashore. The Captain was reasonable and decent, but unfortunately influenced by his crew before we talked together. After discussing things, Señor Williams kindly acting as interpreter, he decided to accept my plan of all sticking together whatever happened. Shook hands and said, 'If he did not get the Professor and myself to Magallanes, none of them would get there.' Failing to get wind to-morrow, it was decided to try and tow schooner from small row boat.

July 20, Saturday. Started at daybreak, 7 a.m. Dead calm sea. Two men with one oar each on schooner, three rowing tow boat, and myself steering. We hugged the coast of Clarence Island (Cockburn Channel), the trailing kelp on the water's surface helping us to avoid dangerous rocks. Anchored at 11 a.m. for lunch. Steady drizzling rain. The men were wet and sullen, and their hands were blistered from rowing. There was not a breath of wind: our sails hung slack. After a hard day's work we had made only six miles. Anchored near Monte Sarmiento for the night.

July 21, Sunday. Drenching rains varied by snow and sleet throughout the night. Bitterly cold. Left anchorage at 7 a.m. Men rowing again in small boat, an occasional breeze filling our waiting sails which gave the rowers a spell, but it soon calmed again. San Isidro lighthouse still 14 miles off. Anchored again at 3.30 p.m. Weather overcast and ominous of change.

July 22, Monday. Left at 4.30 a.m. under sail and fair wind (south-west). At 8.30 a.m. saw smoke on the coast a little to the south of Shoal Bay in Cockburn Channel, and soon a small boat came out from the shore. They shouted to us, and very quickly they were alongside the schooner asking for food in exchange for two otter skins. They were

Alakaluf Indians: a terrific hurricane had blown away their toldo (wigwam) during the night and they were very much frightened. The old woman's face was painted with black charcoal. We had little in the way of stores to give them, but the Captain gave them a little meat and biscuits for their skins. After the departure of the Indians, the sea calmed again and once more the men were in the row boat endeavouring to get us out of Cockburn Channel into Magdalen Sound from where we hoped to attract attention from the San Isidro lighthouse.

An hour later we suddenly felt a south-west wind coming in concentrated and relentless fury as it fell upon us released from the mountain faces, one furious gust breaking our mainsail-sheet and swamping the tow boat; one of the crew narrowly escaped being washed away. The glowering snow mountains we had been striving to pass quickly receded; we were travelling at a terrific speed. Forced to our bunks in the chainlocker, the booming and hissing of the sea as our boat competed with the furies were indescribable, snow squalls at intervals adding to the Captain's difficulties, who without food steered and shrieked at his crew until 12 p.m. that evening, when the wind turned against us, and we anchored off San Isidro lighthouse.

July 23, Tuesday. At daybreak, rowed by Captain, Señor Williams, and one of the crew along coast, from where I telephoned English Consul and Capitan of the Port for help—Magallanes being only 12 miles away. After two and a half hours of awful waiting, the rescue boat under sail and motor appeared. Meanwhile the sea had grown in fury. Each wind seemed to storm against a worse wind, and after one almost fatal attempt to tranship us, each boat was forced to guard herself. Towards evening the excited yelling of the sailors announced the second boat sent out for us, which managed to come alongside us and quickly and successfully

transhipped the Professor, Señor Williams, and myself. With the exception of a small personal case containing the Professor's last work and Field notes all luggage together with Museum Collection was left on the 'Renalto'. From the small glassed-in steering box of the 'Antonia Dias', which shipped every wave, and seemed as much under the water as on the water, it appeared only a matter of time till we were entirely submerged. But I knew nothing of the fame of this tugboat, which was supposed to be capable of defying any sea. This was generously sent to our rescue by Señor Ihnes of Braun & Blanchard, Magallanes. One realized that the first boat which had been sent must have inevitably failed in such a sea. In less than two hours we arrived safely in Magallanes, where again, through the kind and invaluable assistance of Señor Ihnes, the English Consul, and Señor Ken Williams, the many distressing difficulties and foreign laws were eventually solved.

The Doctor's autopsy of the Professor revealed Angina Pectoris,¹ and he was buried in Magallanes on July 26, 1929.

The schooner 'Renalto' came in late next day almost intact with our luggage and the Museum Collection.

The distance from Isle Navarino to Magallanes is 310 miles. The journey with a good motor engine is usually done in three days. We had taken nine days. The 'Renalto' was smashed to pieces eight days later just as her crank-shaft was successfully repaired and she was awaiting her next voyage anchored in the Bay of Magallanes. Such storms have not been known in the South for the past nine years. In the second storm four sailors were drowned, and more than a hundred small boats were thrown up on the beach in Magallanes.

July 28, 1929. A letter from Señor Tekenica Williams of Rio Douglas, Navarin Island, to Mrs. Arthur Young.

¹ See pp. 65, 106.

PLATE XIII



The Schooner 'Renalto' which brought Spencer's body from Isle Hoste to Magallanes

DAY. MUS. MELB.

Casilla 244,
Magallanes, Chile.
July 28, 1929.

Mrs. A. Young, Glasgow.

My dear Madam,

My object in writing to you is to give you news about your dear father's movements during the last two months and about his death. My brother and I have a small farm on Navarin Island, which is about forty miles from Cape Horn. For the time mentioned above, your father and Miss Hamilton were our guests. During this brief period he endeared himself to all who came in contact with him, and all had the highest opinion and respect for him. He was exceedingly interested in his work of studying the customs and habits of the Yaghan Indians.

After spending some time at our station, where he met several Indians, he wished to go to another camp, so I took him and Miss Hamilton across to Hoste Island in our motor cutter. A few days after his arrival on Hoste Island, he became ill, and much against his will, Miss Hamilton persuaded him to see a Doctor. We left at once to our nearest port, a place called 'Ushuaia', to get one. The doctor unfortunately was ill, and so could not travel, but he sent what he considered suitable remedies. However, the medicines did not do him any good, and after nine days illness, he passed away quite peacefully.

We got a small schooner, which was in the district, to convey the Professor's remains to this town. Our difficulties on the trip here you will have heard about. The Professor was buried in this town by my father, who is a clergyman of the Church of England, accompanied by a large number of influential residents who met your father on his way down to Navarino.

With our profoundest sympathy,
I am, my dear Madam,
Yours very sincerely,
Tekenica Williams.

IV

AN ACCOUNT OF THE ARTEFACTS COLLECTED IN PATAGONIA AND FUEGIA

By HENRY BALFOUR

THE ethnographical and archaeological collections made by Sir Baldwin Spencer during the course of his expedition to South America—the proceeds of his latest, and, to universal regret, *last* activities as a field-researcher—must be divided into two primary series. Firstly, there is a series of objects collected by him and by Miss Jean Hamilton during the voyage down the coast of Patagonia, chiefly at Deseado, San Julian, and Santa Cruz. These specimens were largely procured from local collectors. Secondly, there is a number of objects obtained on the island of Navarin, lying immediately to the south of Tierra del Fuego, from which it is separated by the Beagle Channel, and to the north of the islands of the Cape Horn group. The greater part of these two collections has gone to Australia, to the Melbourne Museum, but I was very kindly allowed to retain a number of specimens for the Pitt Rivers Museum at Oxford, in which Spencer was always keenly interested and in the early installation stages of which he had played a considerable part. These specimens, together with notes hurriedly made upon the main collection before it was shipped to Australia, have supplied me with material for a brief account of the ‘finds’.

The illustrations on Figs. 8–12 were for the most part drawn by me from actual specimens remaining in my hands, a few being re-drawn from sketches made while I was examining the whole collection in London with the help of Miss Hamilton, to whom I am very grateful. The figures are all reduced to a scale of one-half linear of the actual size

of the objects, with the exception of Fig. 8, no. 6 and Fig. 10, no. 7, which are reduced to one-quarter linear.

(1) **Collection made on the Patagonian coast.**

The material collected at places visited along the coast of Patagonia consists principally of unmounted *bolas* stone-weights, implements of bone and of stone, and discoidal shell beads.

The unmounted *bolas* weights are spheroidal stone balls, shaped by 'pecking' or abrasion; in some instances the surfaces are left unsmoothed, in others the whole surface is more or less smoothed by grinding. The stones vary both in size and shape. Some (Fig. 1, no. 1) are almost spherical; others (Fig. 1, no. 2) have the vertical axis slightly longer than the horizontal; others, again (Fig. 1, no. 3), exhibit a longer horizontal axis with bluntly pointed ends. A groove, varying in width from about $\frac{1}{8}$ in. to $\frac{1}{2}$ in., encircles each stone vertically, and has been formed by 'pecking' the surface, these grooves providing a firm attachment for the thongs. The owner of an estancia, situated about forty miles inland from Santa Cruz, presented one of these hunting weapons in its complete mounted state, as used for the capture of the Rhea (or 'South American Ostrich'). This specimen (Fig. 1, no. 4) consists of two stone weights of different sizes and shapes, united by a line of twisted, two-ply raw horse-hide, 7 ft. 8 in. long, with a knotted join at the centre. The heavier weight is spherical, of a hard, dark-greenish-grey stone, and the surface is carefully smoothed by grinding. A strap of raw-hide, $\frac{11}{16}$ in. in width, passes vertically round and grips the ball tightly along the groove, the ends of this strap being brought together at the top, where they are perforated for the cord, and are sewn together with raw hide, and further secured with a plaited collar of narrow hide-strip. In order to prevent the strap from slipping out of the groove, a broad

band of hide ($1\frac{5}{8}$ in. wide and evidently cut from the skin of a horse's tail, so as to form an unbroken band) has been drawn, while 'green', over the stone and strap, and has been allowed to shrink on as it dried. This band almost completely envelops the stone and grips the encircling strap very firmly. The whole attachment for the cord is very effective and ingeniously devised. The second weight is much smaller and of elongated shape with circular transverse section. It is completely enveloped in a close-fitting bag of raw hide, to which the cord is attached. In use, the smaller weight is, I believe, held in the hand, the larger weight being whirled round at the end of the $7\frac{1}{2}$ ft. cord. After release, the weights are projected forward, the cord catches and is checked against the bird's legs or neck, and the weights carry the ends of the cords round and round in opposite directions, the victim being brought to the ground and rendered immobile by the tightly gripping thong.

A few bone implements were obtained from near Santa Cruz, being long straight bird-bones simply ground to a point at one end, presumably for use as borers.

Stone implements of the old Patagonian culture are represented in the collection by numerous examples exhibiting a good range of varieties, such as arrow- and lance-heads, knives, scrapers, and borers, together with some indeterminate forms of large size. The arrow- and lance-heads fall into two categories, (1) those made from hard silicious stone—e.g. agate, chalcedony, quartz, chert, &c.—or from black obsidian. Many of these are finely made, being skilfully and delicately flaked all over. Nearly all are furnished with tangs which vary much in width, and which are usually notched at the base. Barbs are present in several examples (Fig. 9, nos. 1, 2, 3, 4). No. 4 is of obsidian, the other three apparently of chalcedony. These examples were obtained by a resident at Deseado from ancient middens. A beautiful

lance-head of translucent, opalescent agate (Fig. 9, no. 5) is very skilfully flaked all over both surfaces. This blade is very thin (about 4 mm. at the thickest part) and the surfaces are almost flat. The base is notched to form a tang and pair of barbs. (2) Arrow- and lance-heads made from a black or dark grey chert, usually rather coarsely flaked all over, and frequently of imperfect symmetry (Fig. 9, nos. 6-10). Nearly all have very broad tangs, usually concave at the base. Barbs are only slightly indicated. More rarely the base of the blade is without a tang and is notched or concave, as in Fig. 11, no. 1, which shows a very thin blade, flaked with considerable skill over both surfaces. Unfortunately the point has been broken away. The apex of the blades of this group varies greatly in shape. In some the sides are straight and converge to form a point, more or less obtuse (Fig. 9, nos. 6, 7; Fig. 11, no. 1). In others the sides are curved and the apex is either blunt-pointed or forms a continuous curve with the sides, resulting in a wide, convex cutting edge which may be semicircular (Fig. 9, nos. 8, 9, 10). This latter type puzzled Spencer as to their use (see his letter to me). Possibly they were knife-blades, rather than arrow-heads, but their hafting tangs are similar to those of the pointed examples, and all gradations from definitely pointed to semicircular-edged types occur, making it difficult to separate the two groups on a basis of apparently different functions. They cannot be classed as 'scrapers', though tanged, *bevel-edged* scrapers of identical outline are well known, since the edge is not bevelled, both surfaces being equally flaked to produce the cutting-edge. If they served as arrow- or lance-heads their function must have been to cause haemorrhage without deep penetration. Most of the examples in this second group appear to have been collected around San Julian and Santa Cruz.

A very few borers are included in the collection, of which

one is figured (Fig. 9, no. 11). It is of pale brown silicious stone and is of a type abundant in the New World, with widely expanded base, for gripping and rotating, and a narrow, long point. The flaking extends all over one surface, but is limited to the edges on the other. A second example of larger size is of practically identical form and technique. Several of these are figured by Verneau, *Les Anciens Patagons*.

Scrapers are numerous and of varied types. The end-scrapers ('grattoirs') are of interest as many of them exhibit a typically Aurignacian flaking technique along the bevelled edge, probably effected by pressure (Fig. 9, nos. 12-17). They are usually of chert and chalcedony. Side-scrapers ('racloirs') are less numerous but very variable in shape. They exhibit more or less careful bevel-flaking along one lateral margin and little or no other retouching. One of these (Fig. 9, no. 18), obtained by Miss Hamilton, consists of a very irregular flake of grey chalcedony with skilful flaking along one margin to produce the bevelled scraping-edge, the opposite surface is untouched. Other examples strongly resemble Mousterian 'racloirs'. Fig. 9, no. 19 shows a narrow implement, 3 in. long, of chalcedony, which has been flaked to a bevelled edge all along both margins. Its deliberately-bevelled edges suggest that it served as a two-edged scraper, but at one end what appears to be a rough hafting-tang has been formed, the flaking here being on both surfaces. This implement seems to have been made from a tabular piece of chalcedony, since the central area of the upper surface and most of the lower surface are covered with a white porous 'cortex'. It was obtained by Miss Hamilton with no. 18. An interesting compound instrument (Fig. 9, no. 20), obtained with the last, has its margin trimmed all round on one surface (antibulb), to form a very well-flaked end-scraper at one end and a neatly-trimmed point at the other. The bulb surface is unworked.

Excellent flaking technique is seen in a blade (Fig. 9, no. 21) which might function equally as a side-scraper or a knife. It is one of two similar implements of chert found on the beach at Deseado. The blade is quite thin (at no part more than 6 mm. in thickness) and is beautifully flaked all over both surfaces, one of which is almost flat, the other slightly convex. The latter surface (shown in the figure) is strongly bevelled along its straight edge, which suggests a use for scraping. The opposite curved margin is more equally flaked on both faces to a knife-edge. One end is pointed, the other rounded. This seemingly compound tool is closely similar to one figured by Verneau (*op. cit.*, pl. xi, fig. 6) and collected at La Salina, on the Santa Cruz River.

Fig. 9, no. 22 is drawn from a very attractive, leaf-shaped blade of symmetrical outline. It is of blue-green, very hard stone (? pitch-stone) and is 4 in. long by $1\frac{5}{8}$ in. wide, nowhere exceeding $\frac{5}{16}$ in. in thickness. It is elliptical in outline with rounded ends. Flaking extends all over both surfaces, one of which is particularly well, though boldly, flaked in a manner which recalls the surface-flaking of Solutréan 'laurel leaf' blades.

Of bone tools from the Patagonian coast I have note of two long, narrow bones simply ground to a point at one end, but otherwise unaltered; about $6\frac{1}{2}$ in. and 4 in. long respectively. They presumably served as boring tools.

In addition to the tools of stone and bone, there was collected at Santa Cruz a quantity of perforated, circular disk-beads of limestone or, possibly, shell. They were found all together and, curiously enough, had been enclosed in a narrow tube of copper or bronze, formed by curving over a long, flat plate of the metal into cylindrical form. The small fragment of the tube which I have has been somewhat crushed in and the present inner diameter is slightly smaller than the diameter of the larger beads (45 mm. against

50 mm.) which the tube would no longer accommodate. Before being crushed it would just have held the largest of the beads retained (the bulk has gone to Australia). Verneau (op. cit., p. 14) figures and describes similar beads of stone and shell, though none is as small as the largest of the present examples. No doubt the beads were for stringing together to form a necklet. That the group collected by Spencer was so used is indicated by the polishing of the outer margins as contrasted with the dull appearance of the flat surfaces, which, being in close contact, would have escaped much friction and weathering.

(2) Collection made in Fuegia.

The ethnological and archaeological specimens (other than human skeletal remains) collected during the period spent upon Navarin Island and some of the neighbouring islands of the southern group, are mainly referable to the Yaghan culture. According to recent accounts a bare seventy Yaghans still survive, and it seems probable that ere long the tribe will become extinct. The culture of the surviving remnant has undergone modification and many of the old-time characteristic appliances are no longer, or but rarely used. The study of their indigenous material culture becomes increasingly an archaeological concern, and is more and more restricted to objects of non-perishable materials. Still, certain characteristic types of appliances are even yet being made and used, and details of their functions may still be obtained. The Yaghans occupy the most southerly area of the Fuegian group, and are therefore the southernmost autochthonous natives in the world. The 55th parallel of south latitude cuts through their inclement habitat. Being almost entirely dependent upon the sea for their food-supply, the Yaghans live to a great extent in their canoes—like their westerly neighbours the Alacaluf, but in contrast to the

more northerly Ona tribe of Tierra del Fuego. Their outfit of domestic appliances is largely symptomatic of this seafaring existence.

A Yaghan sling (Fig. 8, no. 5) was obtained by Spencer, consisting of a large, lozenge-shaped piece of otter-skin, folded, with the fur outside, so as to form a pocket, or 'cradle', for the stone missile. To each of the upper angles of this is attached, by stitches, a plaited cord, about 26 in. long, terminating in a rough padded knob. One cord is very slightly longer than the other and has a larger terminal knob. This cord was held between the third and little fingers; the other cord was gripped between the thumb and index finger, so as to be easily released in discharging the stone. Slings were commonly, when 'off-duty', worn as fillets round the head, or, alternatively, round the neck. They were in common use among the 'Canoe Indians' (Yaghans and Alacalufs) fifty years ago, but are nowadays almost obsolete.

Among the more striking specimens collected is a very large model of an equipped bark canoe, *anan*, some 7 ft. long (almost half the size of an actual canoe), of the type familiar from smaller models in museums; built of several large sheets of bark (usually of beech, *Fagus betuloides*) stitched together with thin strips of baleen. I cannot describe the model in detail as it has gone to the Melbourne Museum. Bark canoes, formerly universally used by Yaghans and Alacalufs, have been gradually superseded by canoes built of planks, a type probably derived from the Chonos of the north-westerly area, and the old-time bark canoe is now very scarce, a fact which gives importance to accurate models. This large model had been on Bertrand Island for many years.

For stripping large sheets of bark from beech trees for canoe-making, the Yaghans make incisions with shells or

with stone knives, and prise off the slabs with a long, slightly curved and flat bone tool, resembling a thick paper-knife in shape. One of these was found on the Cape Horn Islands and was given to Spencer. It is shown ($\frac{1}{4}$ size) in Fig. 8, no. 6, and is almost 25 in. long and $1\frac{1}{2}$ in. wide; the surfaces are flat and the edges rounded. The Yaghans call this implement *suf-sta*, and use it for pushing up behind the bark from below. The *suf-sta* is sometimes a foot longer than the present one.

Many wedges of whale-bone were found in middens on Navarin Island (Fig. 10, no. 1). These are roughly made, more or less parallel-sided, cut and ground at one end to a curved cutting-edge. The other end is squared and most of the examples show signs of crushing by heavy blows at this end, caused, no doubt, when the wedges were driven in for splitting wood, possibly for building plank-canoes. The bone used appears to be cetacean ribs, a very suitable material for making wedges, since the denser, indurated outer bony layer resists wear, while the softer cancellous interior tissue would be worn away far more rapidly, thus causing the edge to remain sharp during use, in the same way as a rodent's incisors are automatically stropped in use by the more rapid wearing away of the dentine at the back, as compared with the thin front layer of enamel which is far more durable and wear-resisting. The wedge figured (Fig. 10, no. 1) exhibits a quantity of hacked scars upon the upper portion of the flat outer surface of the bone. These scars may have been caused by using the bone as a chopping-block. They remind one very much of the very similar scarring on the surface of many of the bones found by Monsieur Henri Martin at La Quina, associated with remains of Moustierian culture. But, more probably, they were deliberately produced, to roughen the surface and give a better grip to the fingers while holding the wedge during the hammering. The opposite (inner)

surface is, from its spongy structure, already roughened by Nature and would not require to be artificially scarred.

The most important implements of bone are the spear- and harpoon-heads of which a good variety was obtained. Some of these are figured here (Fig. 10, nos. 2-7). They are mostly made from the lower jaw-bones of whales, a few of the smaller examples being, probably, of seals' bones. A very rough spear-head (Fig. 10, no. 2) with plain tapering point and no barbs was found in a midden on Navarin. One margin is roughly jagged and notched toward the butt, to give grip to the hide thongs used for binding it to the shaft. Multi-barbed spear-heads (Fig. 10, nos. 3, 6, 7), with the barbs cut along one margin, such as were used for spearing otters, sea-birds, &c., vary greatly in the number of their barbs (two to thirteen). This type, called *shushani* by Yaghans, is usually notched towards the butt along the barbed margin, for attachment of the hafting-thongs. The spear-head shown in Fig. 10, no. 3, is exceptional in having a tapering and un-notched tang. It was dug out of a midden on Navarin. Fig. 10, no. 6 is from an eleven-barbed specimen obtained on Scott Island. An unusually large specimen of this type is figured ($\frac{1}{4}$ size) in Fig. 10, no. 7. Its length is exactly 24 in. and it is rather massive and evidently made from the mandible of a whale. It is of recent make, showing no sign of wear, and is furnished with thirteen well-cut barbs. The hafting notches along the edge towards the butt are more regular than is usual.

Another distinct type is the bone harpoon-head, *au-ia*, which is detachable from the shaft and is used for capturing seals. These (Fig. 10, nos. 4, 5) have a single barb only; and the butt end is expanded and flattened for fitting rather loosely into the haft-socket. When hafted, a short thong of seal-hide was attached to the narrow neck of the bone head, the other end of the thong being fixed to the shaft. When

a seal was struck, the barbed head came away from the socket, but remained loosely united to the shaft by the thong.

Fig. 10, no. 4 is from an unusually small specimen of this type, from a midden on Navarin. Fig. 10, no. 5 shows a well-made and very typical example which was found on the beach, Rio Douglas, Navarin. A variety of this type, furnished with a pair of barbs, is referred to in the diary, under the Yaghan name *wai-iki*, but apparently was not collected. This type is well known, though relatively uncommon.

In the diary (June 13) mention is made of Grandi's having 'brought a smooth, ground, long piece of whalebone, evidently a "harpoon" in the making'. This is shown in Fig. 11, no. 2. It is about $12\frac{1}{2}$ in. long and $1\frac{1}{2}$ in. wide at the centre. While it may, as suggested, be an unfinished spear- or harpoon-head, it has all the appearance of a finished implement, suitable for use as a kind of flattened marline-spike.

Other implements of bone in the collection are chiefly awls, of which several were obtained, gouge-like tools formed by grinding off one face of a hollow long-bone, and flat, round-ended, spatulated tools, perhaps for smoothing or burnishing. An awl (Fig. 10, no. 8) from Navarin is made from the right humerus of a bird about the size of a duck, and is simply ground down at one end to a fine point, the articular condyles remain unaltered. Another (Fig. 10, no. 9) is made by similar treatment of the fibula of a young mammal, the epiphysis being detached. It was found in a Navarin midden. A third awl, shown in Fig. 10, no. 10, was found by Miss Hamilton also in one of these middens, and seems to have been made by splitting the femur of some large mammal, the bone being very dense and hard. The butt is broken, but the point is sharp and undamaged. Such awls would have been used for stitching and also in making baskets from *juncus magellanicus*, several of which were collected.

The stone implements, most of which were found in the

old middens on Navarin, are in general far coarser in workmanship and also larger than those from the coast of Patagonia, though some exhibit very good technique. Most of them are made from indurated mudstones, passing into slate, or of black chert. Many of the implements collected are evidently unfinished, many others are broken; others, again, suggest only vaguely their probable function. The more definite types of stone implements may be classed as spear-heads, knives, scrapers, and chopping-tools.

Stone spear-heads, *yerkūsh*, are now obsolete among the Yaghans. Several were excavated from the middens (Fig. 11, nos. 3-5). A very skilfully made example is shown in Fig. 11, no. 3. It is tanged and barbed, well flaked all over, and the form is symmetrical. Another tanged and barbed example (Fig. 11, no. 4) is badly broken, but its original outline can be reconstructed. It is a very thin blade for its size, boldly flaked with considerable skill over both surfaces. Fig. 11, no. 5 shows also a remarkably thin blade, nowhere exceeding $\frac{1}{4}$ in. in thickness. Its flaking indicates very skilful workmanship. It is of the concave-based type, and its close resemblance to the Patagonian specimen (Fig. 11, no. 1) is striking, the latter exhibiting a more refined and delicate technique.

The two blades shown in Fig. 11, nos. 6, 7 may, perhaps, be regarded as knives rather than spear-heads. They both are core-implements, coarsely flaked over both surfaces, the margins being secondarily trimmed also on both surfaces. No. 6 is broad leaf-shaped and sharp-edged all round. It closely resembles a specimen figured by Verneau (pl. xi, fig. 20) and obtained at La Salina, Patagonia. No. 7 is taken from a large, broken blade, rather less than half of which was found, the shape and the flaking of which suggests a technique very similar to that of the Solutréan 'laurel-leaf' blades of Western Europe. One is tempted to believe that

blades of these types were probably used for cutting up seals and whales, but it is uncertain whether, or how, they were hafted.

Side-scrapers ('racloirs') are numerous in the collection from Navarin (Fig. 12, nos. 1-7), and usually consist of large flakes, unworked on the bulbar surface and with one of the longer margins flaked along to produce a bevelled edge, which varies in its angle of steepness. The other long margin is often unworked and blunt, for holding in the hand (Fig. 12, nos. 1, 2). In others this edge is sharp as in no. 3. Another specimen has the margin flaked to a bevel all round (no. 4), though far more carefully along one side than the other, which, perhaps, was merely blunted for the hand-grip. No. 5 shows an example in which the distal end is broadly rounded and the bevel-flaking extends round both lateral and distal margins, the butt at the bulbar end of the flake being alone unworked.

A sub-triangular specimen (no. 6) has one edge flaked to a serviceable bevelled edge, the other two edges being very coarsely flaked. The opposite surface (bulbar) has had several flakes detached from it, apparently to improve the hand-grip.

Another sub-triangular example offers an analogy to the 'Moustierian points', inasmuch as two of the margins are bevel-flaked all along and converge to form a pointed end. The base of the triangle is sharp, though untrimmed. The opposite surface shows departure from the Moustierian resemblance, as large flake-scars cover the area. On this surface, however, there is no retouching of the edges.

These 'racloir' types almost throughout strikingly resemble, both in shape and in flaking-technique, implements of the Moustierian culture-phase, and it is interesting to note that in the whole series of stone implements collected on Navarin Island, in the Yaghan area, one can detect close

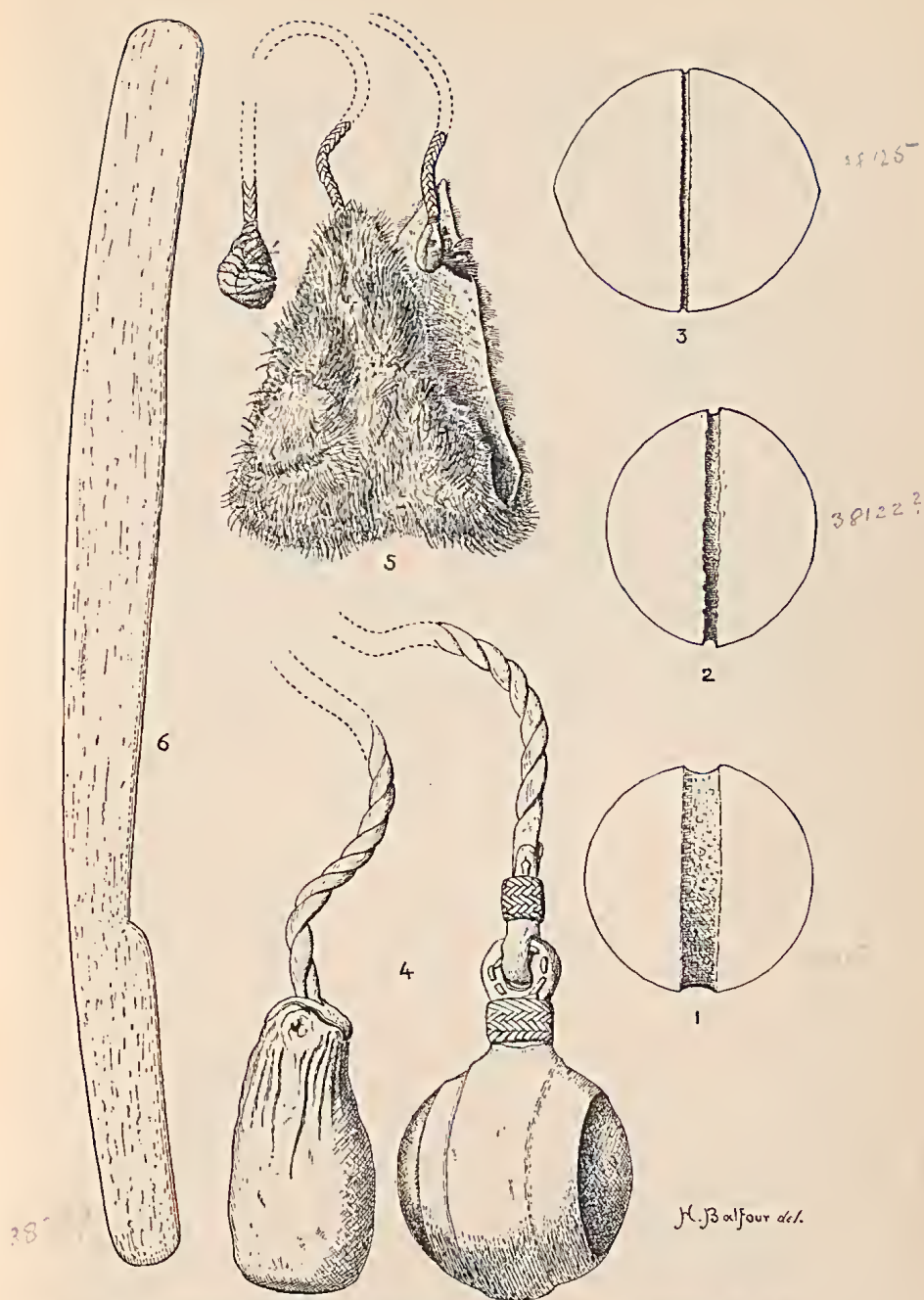


FIG. 8. Patagonian and Fuegian Implements. Nos. 1-5, $\frac{1}{2}$ -linear; no. 6, $\frac{1}{4}$.
3743

T

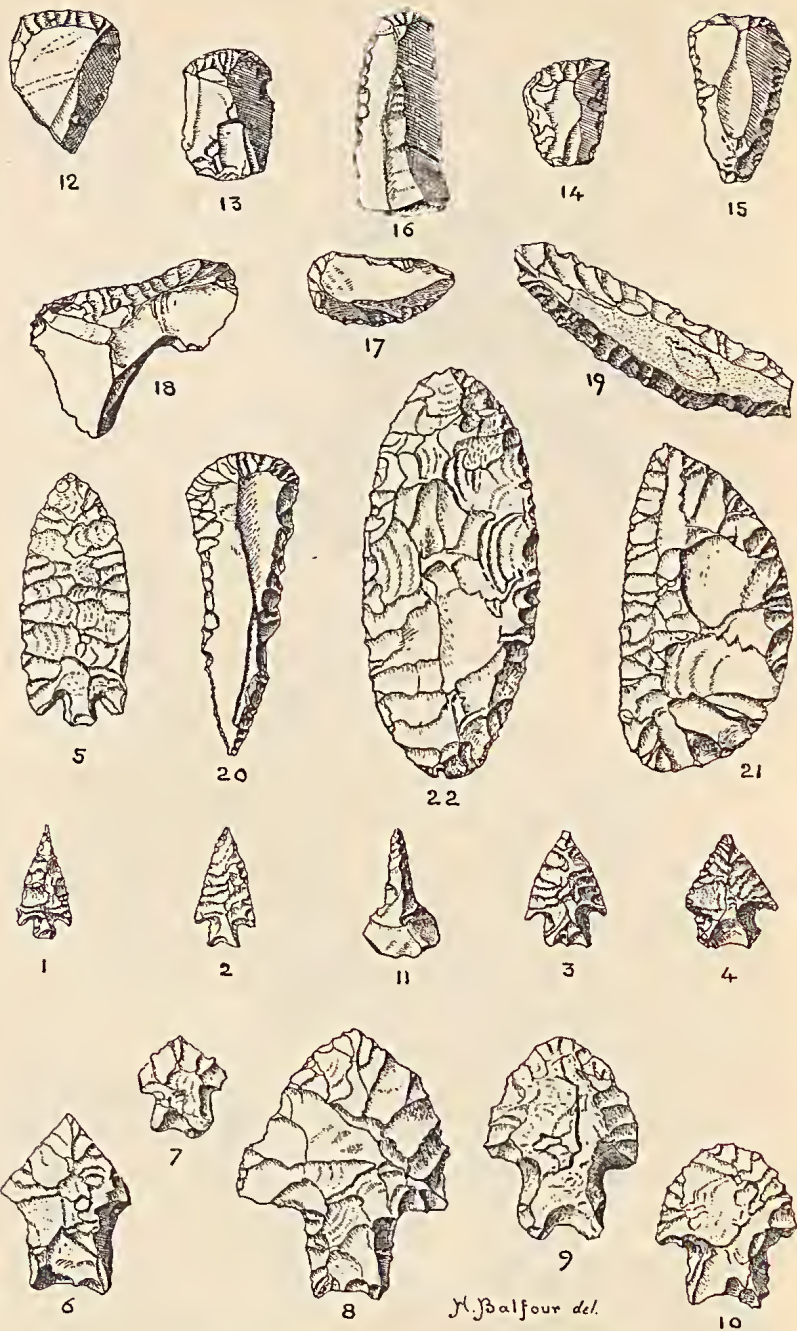
1, 2, 3 Bolas, p. 125

4 Bolas for hunting Rheas, pp. 125-6

5 Sling

4 Bone stripper. Bone, p. 132

18-20 Side-scrapers (Macabino). Chert. p. 128
 21 Side-scraper + Knife - p. 129
 22 Knife & pitchstone. p. 129



M. Balfour del.

FIG. 9. Patagonian Implements. $\frac{1}{2}$ -linear.

1-4 Arrow heads, p. 126 Chalcedony (or obsidian)

5 Lance head, p. 127 "

6-10 Arrow- and Lance-heads. Black chert. p. 127

11 Arrowhead Borer. Brown siliceous stone. p. 128

12-17 End-scrapers (grallones). Usually chert or Chalcedony. p. 128

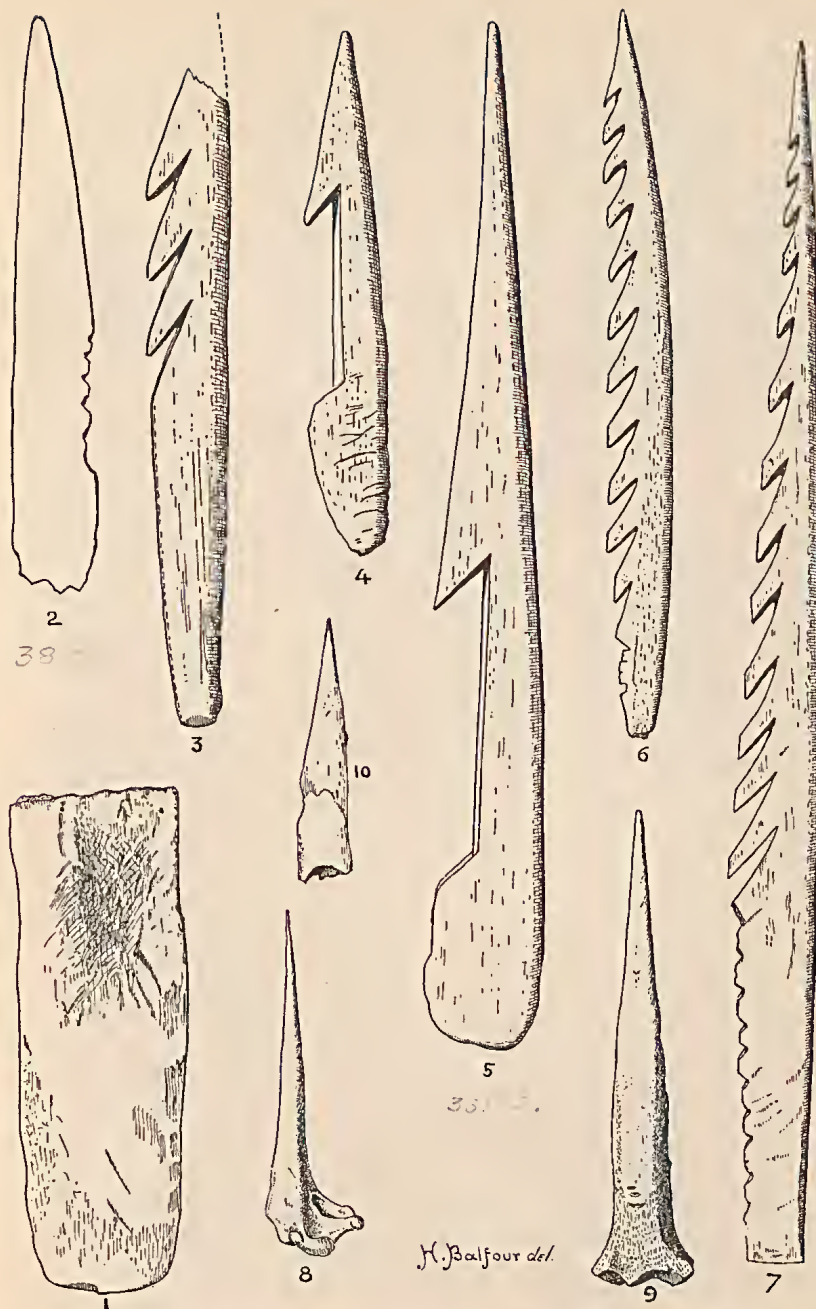


FIG. 10. Yaghan Implements of Bone. No. 7, $\frac{1}{4}$ -linear; rest, $\frac{1}{2}$.

1. Wedge. Bone. p. 132 Rib of whale
 2. Spear-head. Bone. p. 133
 3, 6, 7 & Multi-tarbed Spear-heads. Bone. p. 133
 4, 5. Harpoon-heads. Bone. p. 133
 8-10. Awo's. Bone. p. 134

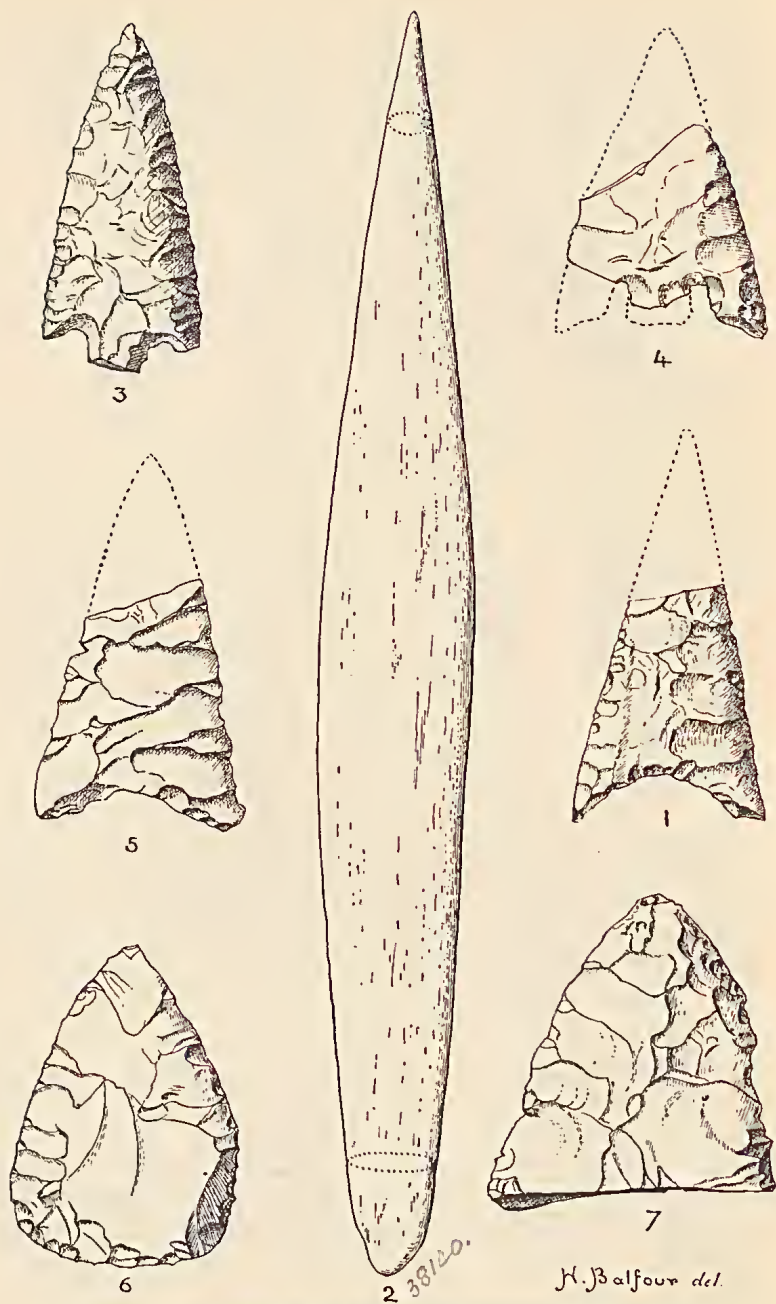
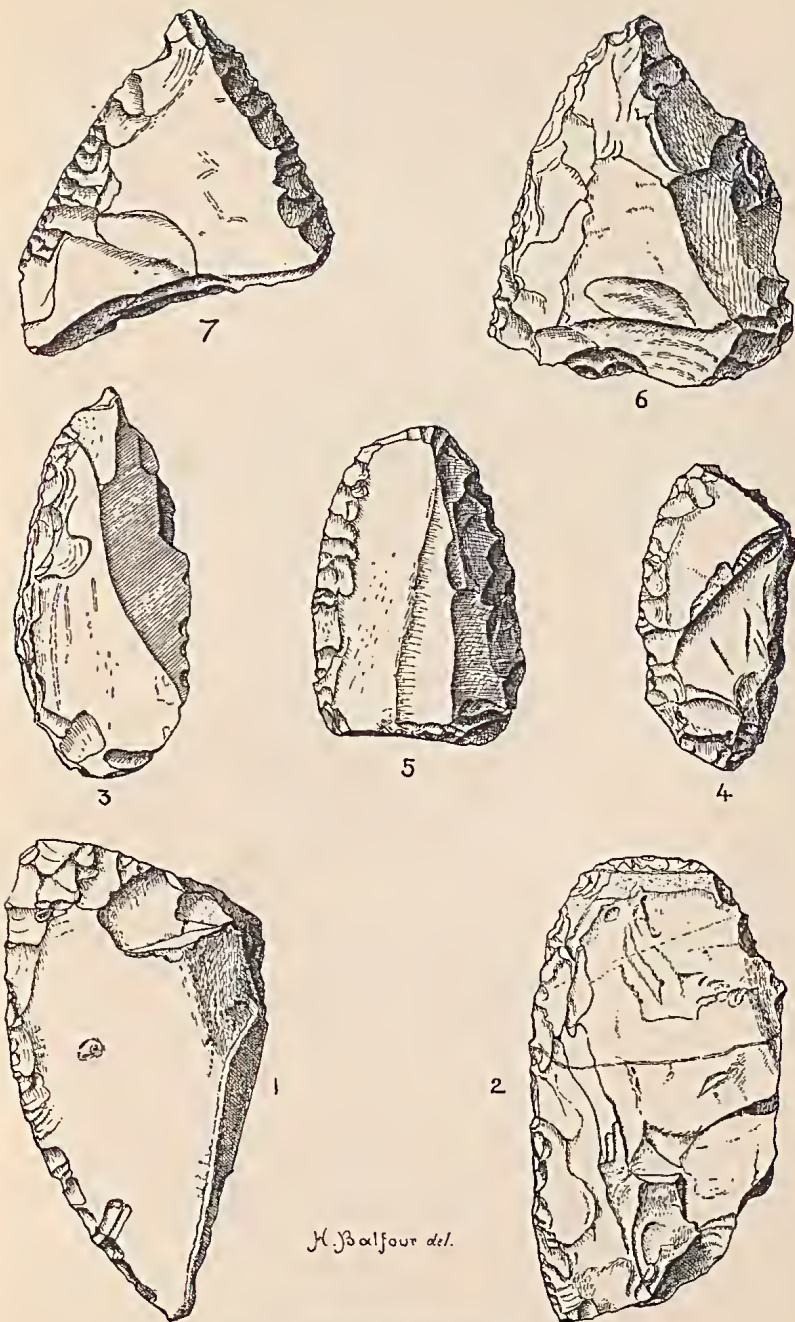


FIG. 11. Modern and Obsolete Implements. $\frac{1}{2}$ -linear.

- | | |
|--|----------|
| 1. Lance-head. Black chert. p. 127 Patagonia | } Yaghan |
| 2. Bone implement ? Marlin's pile p. 134 | |
| 3-5 Spear-heads. Individual mudstone p. 135 | |
| 6-7 ? Knives | |



H. Balfour del.

FIG. 12. Yaghan Side-scrapers. $\frac{1}{2}$ -linear.

resemblances to the forms and techniques of three distinct Stone Age cultures, (1) Moustierian, (2) Solutréan, (3) Neolithic.

I regret that I cannot more fully describe the collection of stone artefacts, but the greater number having gone to Melbourne, I was only able to examine them very cursorily.

The only other artefact objects to be noted are the purplish Photinula shells, *shōn-upushka*, which were roughly perforated for stringing on sinews to serve as neck ornaments. These univalve shells were obtained from the kelp.

In concluding this brief, descriptive summary of the objects of archaeological and ethnological interest, collected during the progress of the expedition, I may add that I esteem it a privilege to have been invited to contribute to the volume in which is summarized the active scientific life-work of one who remained a close and greatly valued friend of mine throughout a period of more than forty years. That he, when already advanced in years and with a very full life's work in scientific research already achieved, should have sought out a new field for investigation, is symptomatic of his restless energy and enthusiasm. While we all must deeply deplore the tragic ending of his last venture, we may find gratification in the thought that Spencer was to the very last keenly and characteristically engaged upon his favourite and most absorbing pursuit—ethnological and zoological field-work. He would, I think, have wished his end to be thus.

V.

NOTE ON SIR BALDWIN SPENCER'S DISSECTION OF THE WING OF THE STEAMER DUCK—*TACHYERES CINEREUS* (Gm.)

By B. W. TUCKER

THE Loggerhead or Steamer Duck—*Tachyeres cinereus* (Gm.) has long been familiar to voyagers in the Straits of Magellan and the neighbouring waters on account of its habit (referred to in Sir Baldwin Spencer's notes, p. 80) of paddling with its wings along the surface of the water instead of flying. Completely flightless individuals and others capable of flight both occur, but whether these represent two distinct species or whether the flying birds are immature individuals, which lose the power of flight as they grow older and heavier, is not even now quite certain, though the balance of probability seems to favour the latter view (see, for example, R. O. Cunningham, *Trans. Zool. Soc.*, vii, 1871, pp. 493–501).

Sir Baldwin Spencer's dissection was made on an adult flightless bird, evidently in the expectation of finding some aberrant features of the musculature correlated with the peculiar habit above mentioned. Unfortunately the diagrams do not provide a complete picture of the musculature of the wing. Neither the muscles of the external aspect of the forearm nor any of the intrinsic muscles of the hand are illustrated, and in the absence of any detailed notes on the dissection some other points in the anatomy are left in doubt. The diagrams, however, as far as they go, reveal hardly any notable difference from the common Mallard—*Anas platyrhynchos* L. (= *boscas* L.) Although the wings are small and useless for flight, the wing musculature, particularly that of the forearm, evidently remains very strongly developed in connexion with the paddling habit, and appears to have undergone no striking modification as a result of the change of function. Some modification in the region of the shoulder-joint might perhaps be anticipated, but if any exists the dissection of this region has not been carried far enough to reveal it. The division of the biceps corresponding to its two insertions on the radius and ulna respectively appears to be carried well up into the belly of the muscle, certainly much farther than in *Anas*, though I have not had an opportunity of examining any diving duck

in this connexion.¹ The small diagram of the elbow-joint shows some differences from the Mallard, though the qualification added to the last sentence should be borne in mind. Thus, it appears from the diagram (which the key confirms) that the two tendons of the biceps are inserted on the radius and ulna respectively. This is probably the commonest arrangement in birds, but in the Mallard one has a double insertion on both radius and ulna, while the other is inserted on the ulna only.² Two small ligaments are figured and labelled, connecting the humerus with the ulna (or possibly really with the ulna and radius respectively), where in *Anas* I find a continuous sheet of ligament covering the ventral aspect of the elbow-joint and connecting the humerus with both bones of the forearm. But apart from such small differences and some other minor ones—e. g. in the disposition of the ligaments of the wrist-joint—which the diagram appears to indicate, the agreement with *Anas* is very close indeed. So far as can be judged, therefore, the peculiar method of progression of the Steamer Duck has entailed no significant modification of the ordinary wing musculature.

¹ Fürbringer (*Untersuchungen zur Morphologie und Systematik der Vögel*, i. 509) mentions the Swan (*Cygnus*) as one of the forms in which the 'division begins already in the belly of the muscle', but no duck.

² Haswell (*Proc. Linn. Soc. New South Wales*, iv, 1880, 308) quotes the Anatidae as an example of birds in which one tendon is inserted on the radius and the other on the radius and ulna, but at least in *Anas platyrhynchos* the condition is as above stated.

VI

A CHRONOLOGICAL LIST OF SPENCER'S WORKS

By T. K. PENNIMAN

COMPILED from the Royal Society's *Catalogue*, the *Zoological Record*, the *Journal of the Royal Anthropological Institute* (which has kindly furnished details from its own list), the list sent by the Mitchell Library in Sydney, the list sent by the National Museum at Melbourne, and the Papers submitted in the Application for the Chair at Melbourne. OR in clarendon type means that the work is to be found in the Radcliffe Scientific Library at Oxford, while M means that the work is in the National Museum at Melbourne, and S that it is in the Mitchell Library at Sydney. In a very few cases where a work is not in the Radcliffe, there is a reference to another library in Oxford.

Works submitted for the Chair at Melbourne in 1886

Observations on the cranial nerves of Scyllium (w. Prof. Milnes Marshall), *Q. J. Micr. Sci.*, July 1881. OR

The eggs of monotremes, *Nature* 31, 1885, 132-5. OR

The urinary organs of the Amphipoda, *Q. J. Micr. Sci.* 25, 1885, 183-91. OR M

Some notes on the early development of *Rana temporaria*, *Q. J. Micr. Sci.* 25, 1885 (Suppl.), 123-37. OR

On the fate of the blastopore in *Rana temporaria*, *Zool. Anz.* 8, 1885, 97-8. OR

The parietal eye of *Hatteria*, *Nature* 34, 1886, 33-5. OR

Preliminary communication on the structure and presence in *Sphenodon* and other lizards of the median eye, described by von Graaf in *Anguis fragilis*, *Roy. Soc. Proc.* 40, 1886, 559-65. OR

On the presence and structure of the pineal eye in *Lacertilia*, *Q. J. Micr. Sci.* 27, 1887, 165-238. OR S

After Election to the Chair at Melbourne

(Field Naturalists' Club of Victoria, Expedition to King Island in November 1887). Narrative of the expedition, General Results of

- the expedition, *Vict. Naturalist*, vol. 4, 1888, pp. 146 and 162. OR M
- The structure and classificatory position of *Megascolides australis*, *T. & P. R. Soc. Vict.* 24, pt. 2, 1888, 164-8. OR M S
- On the anatomy of *Megascolides australis*, the giant earthworm of Gippsland, *T. R. Soc. Vict.* 1, pt. 1, 1888, 1-60. OR M S
- The nephridia of earthworms, *Nature* 38, 1888, 197-8. OR
- Some curious eyes, *Centennial Mag.*, 1888-9, vol. 1, 105-9. S
- Visit to King Island, *Centennial Mag.*, 1888-9, vol. 1, 12-16. S
- The pineal eye in lizards, *P. R. Inst.* 12, 1889, 22-7. OR
- On the presence of a fluke in the egg of a fowl, *P. R. Soc. Vict.* 1, 1889, 109-10. OR M S
- On the presence of a *Pentastomum* parasitic in the lung of the copper-head snake (*Hoplocephalus superbus*), *P. R. Soc. Vict.* 1, 1889, 110-11. OR M
- On the structure and presence of the Cestode *Amphiptyches* parasitic in *Callorynchus Antarcticus*, *P. R. Soc. Vict.* 1, 1889. OR M
- The anatomy of *Amphiptyches urna* (Grube and Wagener), *T. R. Soc. Vict.* 1, pt. 2, 1889, 138-51. OR M S
- Trip to Croajingolong (w. Charles French), *Vict. Naturalist*, vol. 6, 1889, 1-38. OR M S
- Through Croajingolong, *Centennial Mag.*, 1889-90, 568-74. S
- The pineal eye of *Mordacia mordax*, *P. R. Soc. Vict.* 2, 1890, 102-5. OR M
- On the formation of a double embryo in the hen's-egg, *P. R. Soc. Vict.* 2, 1890, 113-15. OR M S
- Handbook of Melbourne, Spectator Pub. Co., Melbourne, 1890. S
- The nomenclature of chicken embryos for teaching purposes, *P. R. Soc. Vict.* 3, 1891, 23-6. OR M S
- Notes on some Victorian land planarians, *P. R. Soc. Vict.* 3, 1891, 84-93. OR M S
- A new family of Hydroidea, together with the description of the structure of a new species of *Plumularia*, *T. R. Soc. Vict.* 2, pt. 1, 1891, 121-40. OR M S
- Note on the habits of *Ceratodus Forsteri*, *P. R. Soc. Vict.* 4, 1892, 81-4. OR M S

- Preliminary description of Victorian earthworms. Part i, The genera *Cryptodrilus* and *Megascolides*; Part ii, The genus *Perichaeta*; *P. R. Soc. Vict.* 4, 1892, 130-56; 5, 1893, 1-26. OR M S
- On the structure of *Ceratella fusca* (Gray), *T. R. Soc. Vict.* 2, pt. 2, 1892, 8-24. OR M S
- Land planarians from Lord Howe Island, *T. R. Soc. Vict.* 2, pt. 2, 1892, 42-51. OR M S
- Address (on the fauna and zoological relationships of Tasmania), *Aust. Ass. Rep.* 1892, 82-124. OR S
- Contributions to our knowledge of *Ceratodus*. Part i, The blood vessels. *N. S. Wales Linn. Soc.* (Macleay Mem. Vol.), 1893, 1-34. OR S
- A trip to Queensland in search of *Ceratodus*, *Vict. Naturalist* 9, 1893, 16-32. OR M S
- The anatomy of *Pentastomum teretiusculum*, *Baird, Q. J. Micr. Sci.* 34, 1894, 1-73. OR S
- Note on the occurrence of *Peripatus insignis* in Tasmania, *P. R. Soc. Vict.* 7, 1895, 31-2. OR M
- Preliminary notes on Tasmanian earthworms, *P. R. Soc. Vict.* 7, 1895, 33-54. OR M S
- Preliminary notice of two new species of marsupials from Central Australia, *P. R. Soc. Vict.* 7, 1895, 222-4. OR M S
- The presence of a stridulating organ in a spider, *Nature* 51, 1894-5, 438. OR
- Preliminary description of a new species of *Apus* (w. Thomas Sergeant Hall), *Vict. Naturalist* 11, 1895, 161-2. OR S
- (The Horn Scientific Expedition to Central Australia, 1894.) The whole of the reports were edited by Spencer, 1896. Distinct reports by him are: Editorial note, part i, p. xi; A narrative of the expedition, part i, p. 1; Summary of the zoological, botanical, and geological results of the expedition, i, 139-71; Mammalia, ii. 1; Amphibia, ii. 152; Crustacea (w. Hall), ii. 227; On the presence and structure of a stridulating organ in *Phlogius* (*Phrictus*) *crassipes*, ii. 412; *Acanthodrilus eremius*, a new species of earthworm, ii. 416. OR M S
- Preliminary description of certain new marsupials from Central Australia, together with remarks upon the occurrence and identity of *Phascogale cristicauda*, *P. R. Soc. Vict.* 8, 1896, 5-13. OR M S
- Baron von Mueller, *Vict. Naturalist*, 13, 1896, 87-92. OR S

Description of two new species of marsupials from Central Australia, *P. R. Soc. Vict.* 9, 1897, 5-11. OR M S

Central Australia, *Alma Mater*, May 1897, 14-16. S

Notes on some Central Australian Tribes, *Alma Mater*, June 1897, 16-17; July, 14-15; Sept., 11-12. S

Account of the Engwurra or fire ceremony of certain Central Australian tribes, *P. R. Soc. Vict.* 10, pt. 1, 1897, 17-28. OR M S

Description of a new genus of terrestrial Isopoda, allied to the genus *Phreatoicus* (w. Thomas Sergeant Hall), *P. R. Soc. Vict.* 9, 1897, 12-21. OR M S

(Semon's 'Zoologische Forschungsreisen in Australien und dem Malayischen Archipel.') Der Bau der Lungen von *Ceratodus* und *Protopterus*. *Jena Denkschr.* 4 (2), 1898, 51-8.

Some remarks on Totemism as applied to Australian Tribes (w. Gillen), *J. A. I.*, 1898, vol xxviii, 275. OR

Notes on certain of the initiation ceremonies of the Arunta tribe, Central Australia (w. Gillen), *P. R. Soc. Vict.* 10, pt. 2, 1898, 142-74. OR M S

Native Tribes of Central Australia (w. Francis James Gillen), London, Macmillan, 1899. OR M S

The structure and development of the hairs of monotremes and marsupials (w. Miss Georgina Sweet), Part i, Monotremes, *Q. J. Micr. Sci.* 11, 1899, 549-58. OR S

A description of *Wynyardia Bassiana*, a fossil marsupial from the Tertiary beds of Table Cape, Tasmania, *Zool. Soc. Proc.* 1900, 776-95. OR

The National Museum of Victoria, *Vict. Naturalist* 17, 1900, 14-16. OR S

Totemism in Australia, *Alma Mater*, April 1900, 13-17. S

Further descriptions of Australian earthworms, Part i, *P. R. Soc. Vict.* 13, 1901, 29-67. OR M S

Two new species of frogs from Victoria, *P. R. Soc. Vict.* 13, 1901, 175-8. OR S

Across Australia, *Vict. Naturalist* 20, 1903, 76-83. OR M S

List of papers, &c., Vict. Roy. Comm. Univ. of Melbourne, final report, 1904. S

Totemism in Australia, *Australasian Ass. Adv. Sci.*, vol. 10, p. 376, 1904. OR M

- Northern Tribes of Central Australia (w. Francis James Gillen), London, Macmillan, 1904. OR M S
- The King Island Emu, *Vict. Naturalist* 23, 1906, 139-40. OR M S
- Description of a new species of peripatoides from West Australia, *P. R. Soc. Vict.* 21, pt. 2, 1908, 420-2. OR M S
- Description of a new species of *Sminthopsis*, *P. R. Soc. Vict.* ser. 2, 21, 1908, 449-51. OR M S
- On the structure of *Hologloea dubia*, an organism of doubtful affinity, *P. R. Soc. Vict.* 21, pt. 2, 1908, 401-9. OR M S
- A collection of sub-fossil bird and marsupial remains from King Island, Bass Strait (w. J. A. Kershaw). *Melbourne Mem. Nat. Hist. Mus.* 3, 1910, 1-35. M S
- The existing species of the genus *Phascolomys* (w. Kershaw), *Melbourne Mem. Nat. Hist. Mus.* 3, 1910, 37-65. M S
- The origin of cuts on bones of Australian extinct marsupials (w. R. H. Walcott), *P. R. Soc. Vict.* 24, pt. 1, 1911, 92-123. M S
- Preliminary report on the Aborigines of the Northern Territory, *Northern Territory Administration Report*, 1912, 36-52.
- Across Australia (w. Francis James Gillen), 2 vols., London, Macmillan, 1912. OR M S
- Introduction to the study of certain native tribes of the Northern Territory, Melbourne, McCarron, Bird, & Co., 1912; *Aust. Ext. Affairs, Bull. Northern Territory* 2. M S
- Preliminary report on the Aborigines of the Northern Territory, Melbourne, A. J. Mullett, Govt. Printer, 1913; *Aust. Ext. Affairs Bull. Northern Territory* 7. M S
- Aborigines of Australia, Federal Handbook of Australia, 1914; by G. H. Knibbs. S
- Victorian Libraries, Museums, and Art Galleries, Handbook to Vict. —*Brit. Ass. Adv. Sci.*, Aust. meeting, Melbourne, 1914. M
- Native Tribes of the Northern Territory of Australia, London, Macmillan, 1914. OR M S
- How we wrote our book 'Across Australia', *Life*, Oct. 1914, 1055-68. S
- Australian Universities, Australia To-day, 1914. S
- The Australasian Critic, ed. by T. G. Tucker and Sir W. B. Spencer. S
- Collection of works by Australian artists loaned to . . . National

- Gallery of N.S.W. by Sir W. B. Spencer, W. A. Gillick, Govt. Printer, 1916. S
- What is Nardoo? *Vict. Naturalist* 34, 1918, 170. OR M
- Collection of Australian pictures and works of art will be sold . . .
May 19, 1919 (catalogue), Melbourne, Anderson Gowan Pty, Ltd., 1919. S
- Methods of treating the dead amongst Australian tribes, *Aust. Ass. Report* 10, F, 1921, p. 361 (title only). M
- Blood and shade divisions of Australian tribes (w. bibliography), *P. R. Soc. Vict.* 34, 1921-2, 1-6. M S
- Guide to the Australian Ethnological Collection exhibited in the National Museum of Victoria, 3rd ed., 1922; 2nd ed., 1915; 1st ed., Guide to the Ethnographical Collection, &c., n.d. M S
- The Arunta, a Study of a Stone Age People (w. Francis James Gillen), 2 vols., London, Macmillan, 1927. M (Bodley)
- Wanderings in Wild Australia, 2 vols., London, Macmillan, 1928. M (Rhodes House)

NAT. MUS. MELB.

INDEX

Notes concerning any aspect of the Yaghans or their culture are indexed under *Yaghan Indians*. Notes concerning Animals, Birds, &c. are indexed under those general headings.

- a'Beckett, Mrs. T., 40.
 Aborigines, Spencer's policy for, 36 f.
 Adami, Prof. J. G., 17.
 Alacaluf Indians, 111-13.
 Alice Springs, 25.
Animals of Tierra del Fuego: in general, 75, 87, 98, 104, 106; otter, 68 f., 75; seal, 94.
 Artefacts, *vide* Patagonian Artefacts, and Yaghan Indians, s.v.
 Arunta, 1 f., 26 f.
Arunta, The, A Stone-Age People, 10, 17, 38.
 Australian Association for Science, 24.
 Australian Expeditions, 2 f.; to Central Australia, 26 f., 38; to Northern Tribes of Central Australia, 31 f.; to Northern Territory, 34 f. *Vide* Horn Expedition, Croajingolong, King Island.
Australasian, The, 38, 41.
 Balfour, Henry, 22, 23, 42 f., 51 f., (124-42).
 'Beagle', *Voyage of the*, *vide* Darwin.
 Biological Laboratory, Melbourne, 24.
Birds of Tierra del Fuego: in general, 76, 81, 82, 85, 89; Chimango, 87, 91; Karancha, 86; Kelp Goose (*Anas antarctica*), 79, 80, 91; *Phrygilus gayi*, 81 f.; Shags, 72; Steamer, Loggerhead, or Paddle Duck (*Tachyeres cinereus* Gm.), 80, 91, 92, 143 f.; *Streptoceryle torquata*, 81.
 Bourne, Dr. G. C., 22, 23.
 Bowman, Mary Elizabeth, *vide* Spencer, Lady.
 Cahill, Paddy, 35.
 Circuit, Señor Walter Spencer-, 15, 51.
 Classificatory system of relationship, 9 f.; *vide also* Yaghan Indians, s.v. Relationship Terms.
 Cooper, Joe, 35.
 Croajingolong, 25, 146.
 Darwin, Charles, *Voyage of the 'Beagle'*, 15, 49 n., 64 n., 75 n., 78 n., 82, 83, 86, 87 n.
 Deseado, Puerto, 49, 52.
 Dramatic representation of legendary ancestors, 5.
 Durkheim, E., 31.
 Exeter College, Oxford, 17 f., 43.
 Expeditions, *vide* Australian Expeditions.
 Fernando Noronha, 49 f.
 Field Naturalists' Club, Victoria, 25.
 Fison, Rev. Lorimer, 28.
 Frazer, Sir James, (1-13), 27-32, 44, 99.
 Frodsham, Rt. Rev. Dr., Bishop of Queensland, 4.
 Gillen, F. J., 2, 25 f., 34 f.
 Gilruth, Dr. J. A., 34 f.
Glasgow Herald, 45.
 Godfrey, Mr., 30.
 Goulty, W. Howard, 17.
 Grandi, Señor, 67, 75 f., 88.
 Hamilton, Miss Jean, 53, 70, 81, 103 n., (108-22).
 Hatherlow Congregational Church, 23.
 Horn Expedition, 1, 25 f., 147.
 Hoste Island, 45, 58, 98, 99-118.
 Howitt, A. M., 28.

- Industrial aspect of Totemism, 7.
- Jak-house, *vide* Yak-house.
- Jowett, B., 19.
- Kaitish, 32.
- King Island Expedition, 25, 145.
- Kitchen middens, *vide* Yaghan Indians, s.v. middens.
- Lang, A., 31.
- Lankester, Sir E. R., 18, 20, 22.
- Larakia Headman, 30.
- Lincoln College, Oxford, 21, 43.
- Magic, sympathetic, 6.
- Mackinder, Sir H. J., 19, 20.
- Macmillan, Dr. George, 30.
- Magallanes (Punta Arenas), 50 f., 55.
- Manchester School of Art, 16.
- Marett, R. R. (14-46).
- Marshall, Prof. Milnes, 16 f., 22.
- McCoy, Sir Frederic, 41.
- McInnes, W. B., 44.
- Melbourne University, 22 f., 34, 40 f.
- Merry, Dr. W. W., 21.
- Morgan, W. L., 17.
- Moseley, Prof. H. N., 18, 20-2, 44.
- Mueller, Baron Sir F. von, 25.
- Murray Narrows, 58, 108, 118 f.
- National Museum, 41 f.
- Native Tribes of Central Australia*, 2 f., 10, 27.
- Native Tribes of Northern Territory of Australia*, 35.
- Navarin Island, 45, 58-99.
- Northern Tribes of Central Australia*, 33.
- Old Trafford School, 15.
- Onahs, 100, 105.
- Owens College, 16 f.
- Patagonia, 49 n., 52 f.
- Patagonian Artefacts, 52 f., 125-30.
- Paternity, ignorance of physical, 4.
- Pineal Eye of Lacertilia, 22, 145.
- Pitt-Rivers collection, 20.
- Plants of Tierra del Fuego**: Fungus, 64, 100, 103; Kelp, 78, 83; Marchantia, 88; Trees, 69, 76 f.
- Pode, E. D. Y., 23.
- Powicke, Rev. Dr., 23.
- Publications, 145-50.
- Punta Arenas, *vide* Magallanes.
- Ramsbottom, Capt., 64 n., 76 n.
- Reincarnation, 4.
- Ridgeway, Sir Wm., 6.
- Rinder, Frank, 45.
- Rio Douglas, 59 f.
- Robson, G. C., 69.
- Romanche: glacier, 56 f.; ship, 79.
- Roth, W. E., 23.
- Royal Society, 22.
- Santa Cruz, 52 f.
- San Julian, 49, 53 n., 54.
- Slater, W. L., 23.
- Scott, Prof., 41.
- Shells and shellfish of Tierra del Fuego**, 59, 62, 63, 69, 79, 83 f., 85, 142.
- Smith, Wm. Robertson, 8.
- Spencer, Lady, 19, 23, 37.
- Spencer, Reuben, 15.
- Spencer, Sir W. Baldwin: birth and early life, 15 f.; Oxford, 17 f.; first interest in anthropology, 20 f.; Lincoln fellowship, 21; Pineal Eye, 22; Melbourne, 22, 40 f.; marriage, 23; Australian Expeditions, q.v.; last illness, 65, 107, 114-18, 123 f.; as artist, 11, 20, 43; character as field worker, 8 f., 12 f., 46; works, 145-50.
- Stirling, Dr. E. C., 25.
- Stott, Sgt., 38.
- Strehlow, 31, 39.
- Syme, David, 32, 33.
- Sweet, Dr. G., 40, 148.
- Tehuelche Indians, 52 f.
- Tidal currents, 81.
- Tomlin, J. R. le B., 69.

Totemism among Central Australians, 5f.
 Trobriand Islands, 4.
 Tucker, B. W., 81 nn., 92, (143-4).
 Tylor, Sir E. B., 19 f., 22, 27 f., 44.

Urabunna, 27, 29.
 Ushuaia, 57 f.

Victorian Naturalist, 25, 146 f.
 'Volcanic bombs', 75.

Wanderings in Wild Australia, 11, 12, 60.
 Ward, Dr. L. Keith, 38.
 Warramunga, 32.
 Westermarck, Prof. E., 10.
 Williams, Claude, 55; Rev. J., 55, 59;
 Tekenica, 57, 59, 108, 122, 123.
 Wollunqua, 12.
 Wongara, 80.

Yaghan Indians: extent, past and present, 90, 105, 109, 117; skeletons and physical aspect, 74, 85, 88-9; customs, religion, sociology, 60, 72, 74, 80, 82, 87, 97, 99, 101-6, 111 f.; relationship terms, 60-2, 65, 70 f.; vocabulary, 60, 66, 70, 73 f., 80 f., 84, 85 n., 96, 99-106; food, 60, 63, 64, 83 f., 103; artefacts, 59, 63, 70, 72, 83, 88, 96, 100, 101, 130-42; middens, 59, 62, 63, 74; Informants: George, 59, 62, 70, 75; Domingo and family, 67, 70, 72, 85, 88 f., 108; Bessie or Juanna, 101-4, 109-11; Clements, 105 f., 112 f.

Yak-house (also 'Jack' and 'Jak'), 76, 104, 111.

Yākā-Shākā, 107, 108.

Young, Mrs. Arthur, 44, 106, 123.

NAT. MUSEUM, AMST. 13.

PRINTED IN GREAT BRITAIN AT THE UNIVERSITY PRESS, OXFORD
BY JOHN JOHNSON, PRINTER TO THE UNIVERSITY



918 276
S 745

